1822 Bank Street

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report

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1 Screening

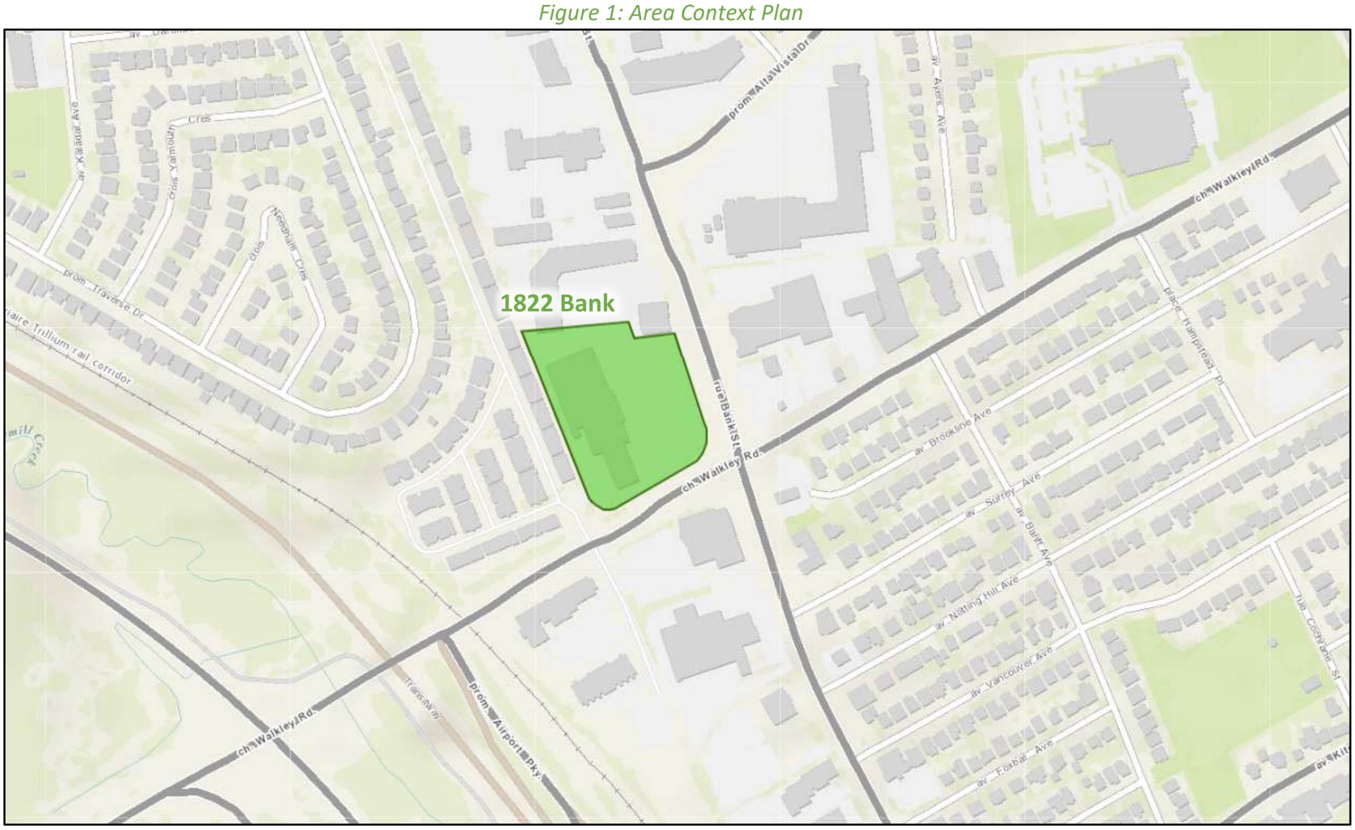
This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, incorporating the 2023 Revision to Transportation Impact Assessment Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is required, and this study has been prepared to support an official plan, zoning bylaw amendment, and plan of subdivision.

2 Existing and Planned Conditions

2.1 Proposed Development

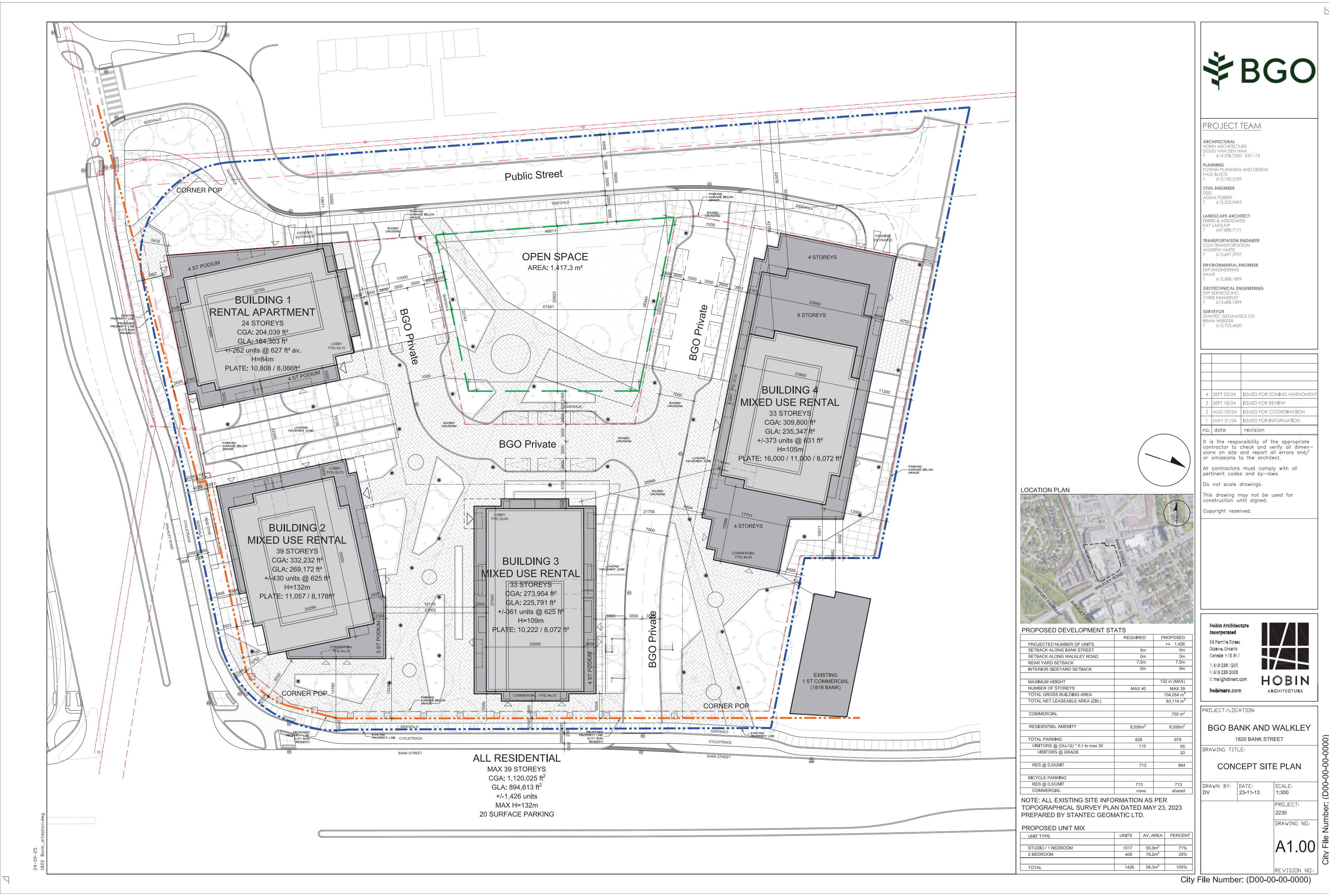
The redevelopment site is located at 1820-1846 Bank Street (referenced as 1822 Bank Street), and it is currently zoned as Arterial Mainstreet Zone (AM8). The proposed redevelopment consists of up to 1,426 residential units, approximately 750 m^2 (8,073 ft^2) of ground floor retail space, and an internal open space. A total of 979 vehicle parking and 713 bicycle parking spaces are proposed. A new local road will be constructed on the western boundary of the site, which will connect to Glenhaven Private and function as the primary access location for the development. Two private roadways and two underground ramp entrances are proposed to access the new local road, the access will remain on Bank Street and the existing Walkley Road access will be removed. The anticipated full build-out horizon is 2035 with construction occurring in multiple phases. The development is within Bank Street Community Design Plan and Bank Street South Secondary Plan. The boundary streets of Bank Street and Walkley Road are Design Priority Area corridors. Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: November 17, 2023

Figure 2: Concept Plan



2.2 Existing Conditions

2.2.1 Area Road Network

Bank Street: Bank Street is a City of Ottawa arterial road with an urban cross-section that varies between four and six lanes. North of Alta Vista Drive includes two lanes in each direction and a two-way left-turn lane, between Alta Vista Drive and Walkley Road provides three lanes in each direction, and south of Walkley Road has a four-lane cross-section that adds a third northbound lane at Surrey Avenue and alternating left-turn lanes to the south of Surrey Avenue. Sidewalks are provided on both sides of the road. The posted speed limit is 50 km/h, and the Official Plan reserves a right-of-way of 37.5 metres within the study area. Bank Street is designated as a truck route.

Walkley Road: Walkley Road is a City of Ottawa arterial road with a four-lane urban cross-section. West of Banff Avenue within the study area, the cross-section is divided, and East of Banff Avenue, it is undivided. Sidewalks are provided on both sides of the road. The posted speed limit is 50 km/h, and the Official Plan reserves a right-of-way of 37.5 metres east of Bank Street and 26.0 metres west of Bank Street within the study area. Walkley Road east of Bank Street is designated as a truck route.

Airport Parkway: Airport Parkway is a City of Ottawa arterial road with a two-lane rural cross-section with paved shoulders on both sides of the road. The posted speed limit is 80 km/h, and the existing right-of-way varies within the study area from a minimum width of 195.0 metres.

Alta Vista Drive: Alta Vista Drive is a City of Ottawa major collector road with a two-lane urban cross-section. Asphalt pathways are present on both sides of the road, and bike lanes are present on both sides of the road east of the 2679 Alta Vista Drive access. The posted speed limit is 40 km/h, and the existing right-of-way is 30.0 within the study area.

Banff Avenue: Banff Avenue is a City of Ottawa local road with a two-lane urban cross-section with a sidewalk on the east side of the road. The posted speed limit is 40 km/h, and the existing right-of-way is 15.0 metres within the study area.

Glenhaven Private: Glenhaven Private is a private local road except for the north leg of the intersection at Walkley and Anand Private, which is owned by the City with a sidewalk on the west side of the road, and it has a two-lane urban cross-section provided. The unposted speed limit is assumed to be 50 km/h. The existing right-of-way for the north leg of the intersection at Walkley and Anand Private is 24.0 metres.

Anand Private: Anand Private is a private local road with a two-lane urban cross-section with a sidewalk provided on the west side of the road. The unposted speed limit is assumed to be 50 km/h.

2.2.2 Existing Intersections

The existing signalized intersections within 400 metres of the site have been summarized below:

Walkley Road at NB Airport Parkway	The intersection of Walkley Road at NB Airport Parkway is a signalized intersection. The northbound approach consists of a left-turn lane and a right-turn lane. The eastbound approach consists of a through lane and a shared through/transit-only right-turn lane, and the westbound approach consists of an auxiliary left-turn transit-only lane and two through lanes. Eastbound right turns and westbound left turns are prohibited, buses excepted, and the northbound right turns on red are prohibited.

Walkley Road at Glenhaven Private / Anand Private	The intersection of Walkley Road at Glenhaven Private /Anand Private is a signalized intersection. The northbound and southbound approaches each consist of an auxiliary left-turn lane and a shared through/right-turn lane. The eastbound and westbound approaches each consist of an auxiliary left-turn lane, a through lane, and a shared through/right-turn lane. No turn restrictions were noted.
Bank Street at Walkley Road	The intersection of Bank Street at Walkley Road is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane, two through lanes, an auxiliary through lane, and an auxiliary channelized right-turn lane and the southbound approach consists of two auxiliary left-turn lanes, two through lanes, and a channelized right-turn lane. The eastbound approach consists of two auxiliary left-turn lanes, two through lanes, and an auxiliary channelized right-turn lane, and the westbound approach consists of two auxiliary left-turn lanes, a through lane, and a shared through/ channelized right-turn lane. No turn restrictions were noted.
Walkley Road at Banff Avenue	The intersection of Walkley Road at Banff Avenue is a signalized intersection. The northbound approach consists of a shared all-movement lane. The eastbound approach consists of a through lane and a shared through/right-turn lane, and the westbound approach consists of a shared left-turn/ through lane and a through lane. No turn restrictions were noted.
Bank Street at Alta Vista Drive	The intersection of Bank Street at Alta Vista Drive is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane, two through lanes, and a shared through/channelized right-turn lane, and the southbound approach consists of an auxiliary left-turn lane, a through lane, and a shared through/right-turn lane. The eastbound approach consists of an auxiliary shared left-turn/through lane and a right-turn lane, and the westbound approach consists of a left-turn lane, and a shared all-movement lane. No turn restrictions were noted.

2.2.3 Existing Driveways

An existing site access is located on Bank Street and two existing site accesses are located on Walkley Road and through Glenhaven Private. Within 200 metres of the site accesses, driveways to a car rental, a retail plaza, a car dealer, a gas station, a pharmacy, and an automobile care center are located on Bank Street. Driveways to a car dealer, a gas station, and an automobile care center are located on Walkley Road. Figure 3 illustrates the existing driveways.

Figure 3: Existing Driveways

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: November 20, 2023

2.2.4 Cycling and Pedestrian Facilities

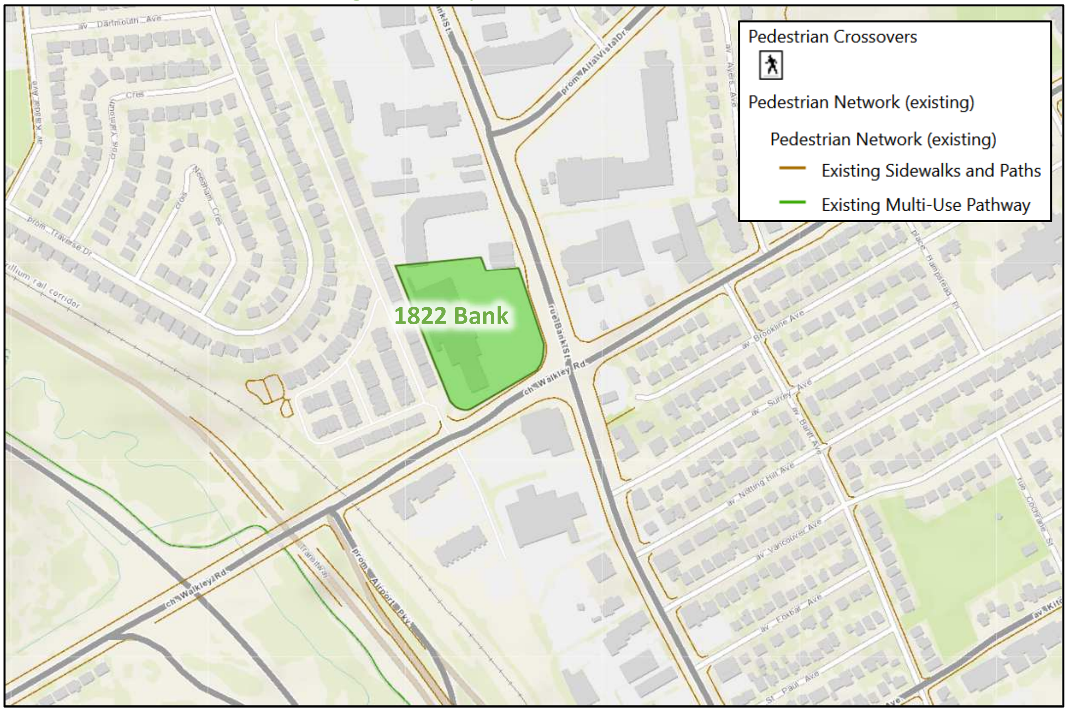
Figure 4 illustrates the pedestrian facilities in the study area and Figure 5 illustrates the cycling facilities.

Sidewalks are provided on both sides of Bank Street, Walkley Road, and Alta Vista Drive, on the west side of Glenhaven Private, and on the east side of Banff Avenue.

Cycling facilities include bike lanes on both sides of the Alta Vista Drive east of 2679 Alta Vista Drive access. Walkley Road is identified as a suggested route between Glenhaven Private and the Walkley Transit Station.

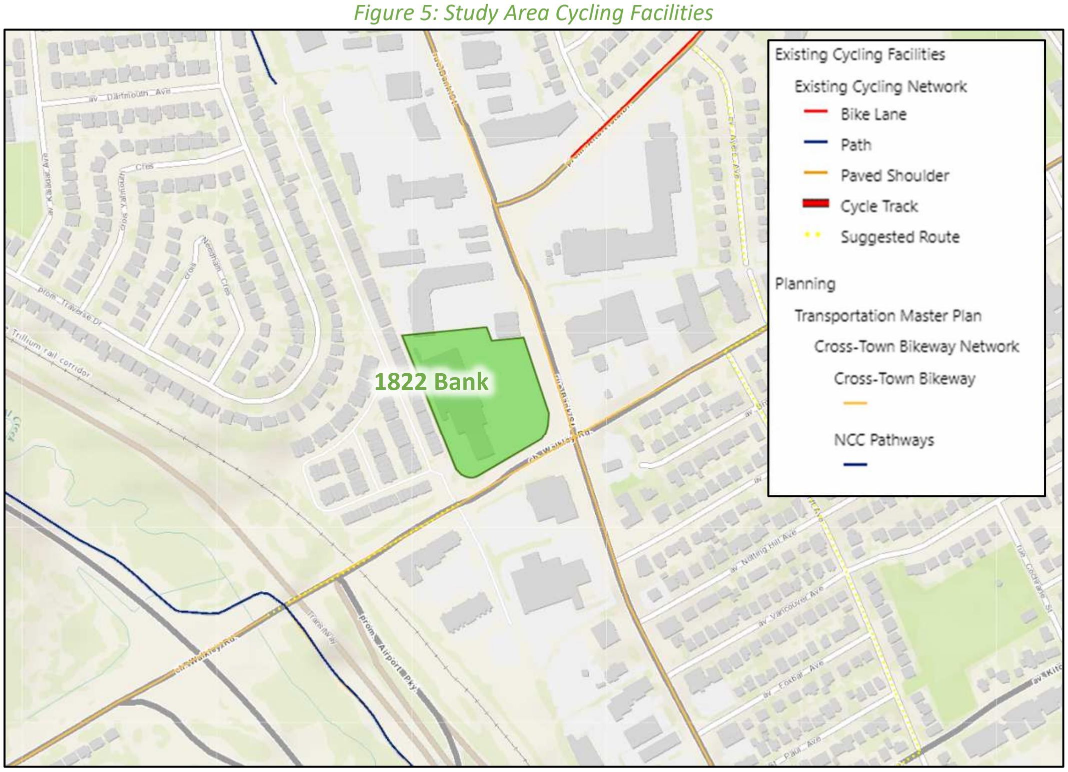
Within the 2023 Transportation Master Plan – Part 1, Bank Road, Walkley Road, and Alta Vista Drive are cross-town bikeways.

Figure 4: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 12, 2024

Figure 5: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 12, 2024

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 6 and Figure 7, respectively. The City of Ottawa notes that the active mode volumes collected in winter may be lower than summer conditions.

Figure 6: Existing Pedestrian Volumes

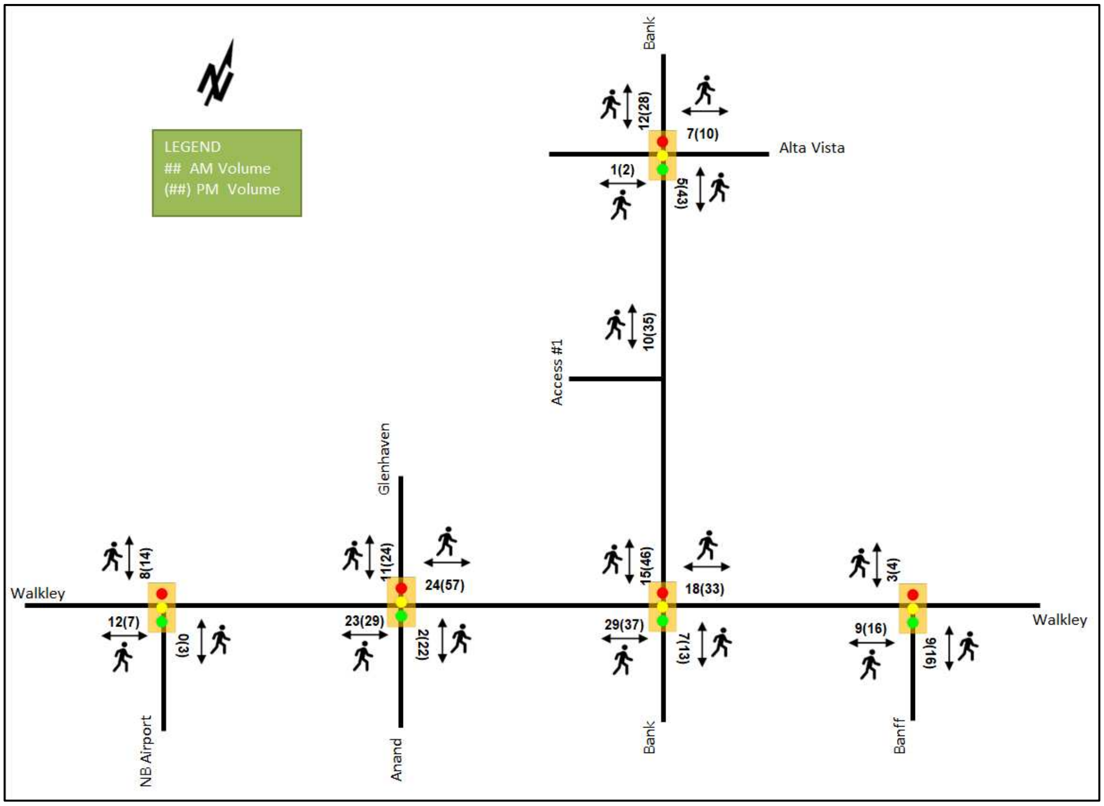
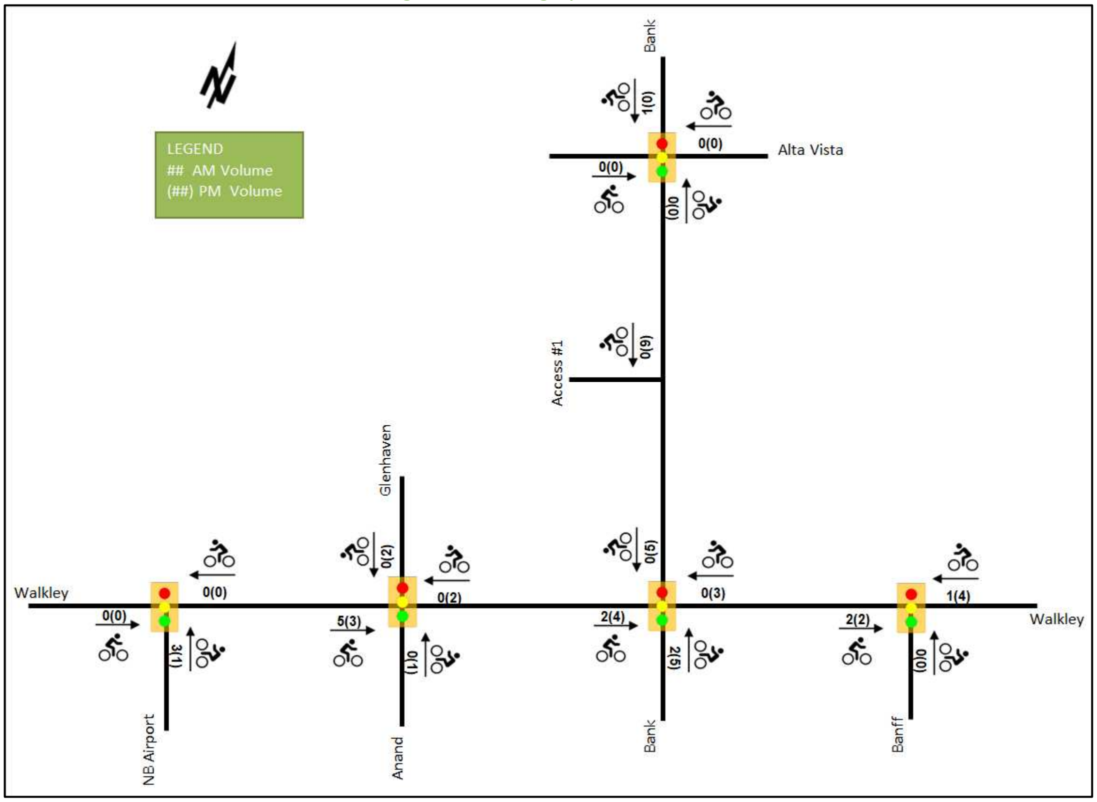


Figure 7: Existing Cyclist Volumes



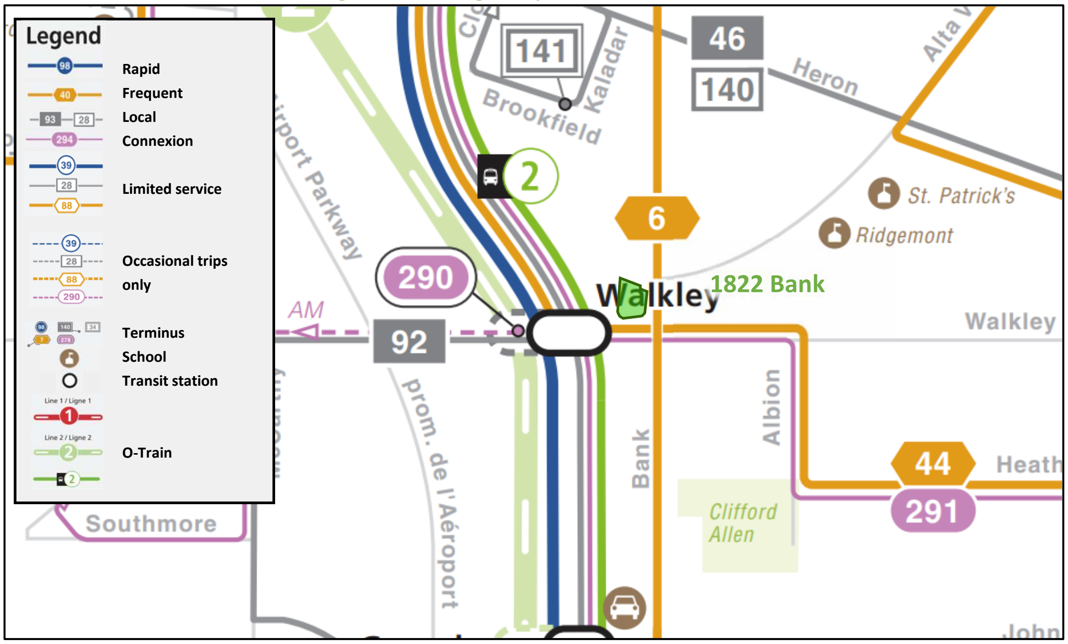
2.2.5 Existing Transit

Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops. All transit information is from August 12, 2024, and is included for general information purposes and context to the surrounding area.

Within the study area, route #6 travels along Bank Street, routes #44, #92, and #291 travel along Walkley Road, and route #698 travels along Alta Vista Drive, Bank Street, and Walkley Road. The frequency of these routes within proximity of the proposed site based on August 12, 2024 service levels are:

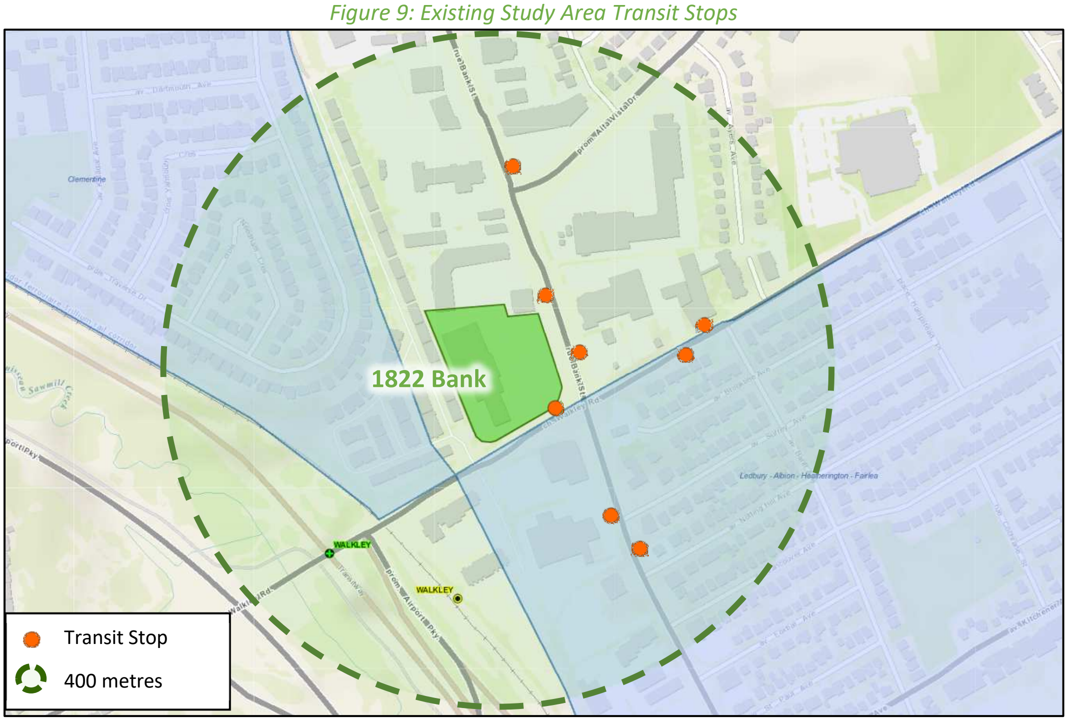
- Route # 6 – 10-15-minute service all day, 30-minute service after 8 PM
- Route # 44 – 10-15-minute service all day, 30-minute service after 7 PM
- Route # 92 – 30-minute service all day
- Route # 291 – six buses between 6AM and 9AM to Hurdman, and six buses between 3:30PM and 6:30PM to Herongate
- Route # 698 – six buses between 8AM and 9AM to St. Patrick H.S, and two buses between 3PM and 4PM to Blohm

Figure 8: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: August 12, 2024

Figure 9: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: November 20, 2023

2.2.6 Existing Area Traffic Management Measures

On-road messaging of the 40 km/h speed limit is present on Banff Avenue.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa and the Traffic Specialist for the existing study area intersection. Table 1 summarizes the intersection count dates.

Table 1: Intersection Count Date

Intersection	Count Date	Source
Walkley Road at NB Airport Parkway	Tuesday, June 21, 2022	City of Ottawa
Walkley Road at Glenhaven Private/Anand Private	Wednesday, November 15, 2023	The Traffic Specialist
Bank Street at Walkley Road	Wednesday, November 15, 2023	The Traffic Specialist
Walkley Road at Banff Avenue	Wednesday, November 15, 2023	The Traffic Specialist
Bank Street at Alta Vista Drive	Thursday, February 24, 2022	City of Ottawa
Glenhaven Private at Access #1	Wednesday, November 15, 2023	The Traffic Specialist

Figure 10 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on volume to capacity ratio (v/c) calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and average delay for unsignalized intersections. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 10: Existing Traffic Counts

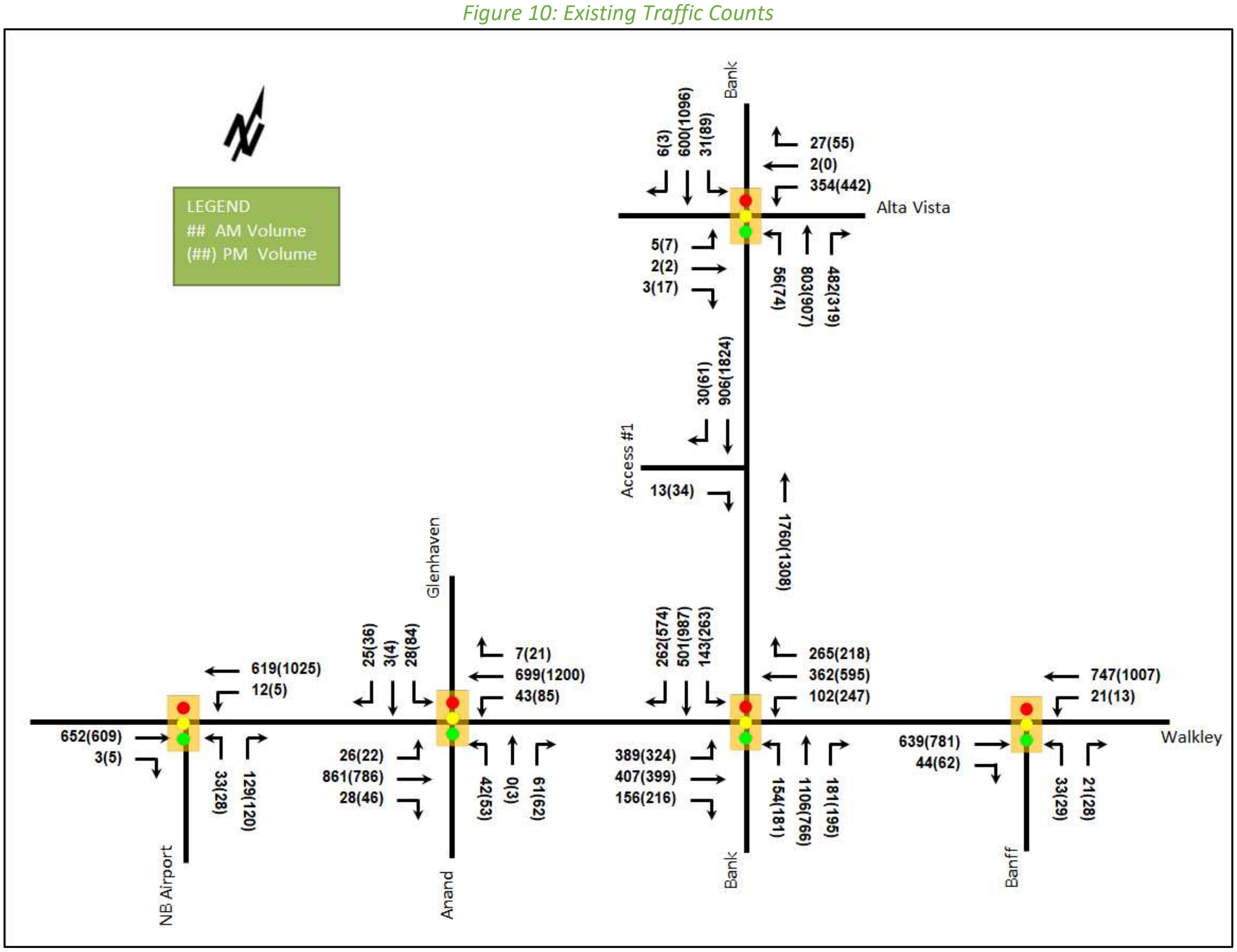


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Bank Street at Walkley Road *Signalized*	EBL	**F**	**1.20**	**159.2**	**#104.5**	**F**	**1.22**	**170.9**	**#90.4**
	EBT	B	0.61	36.1	46.8	A	0.60	39.1	52.9
	EBR	A	0.36	6.7	18.8	C	0.75	51.4	69.8
	WBL	A	0.24	48.9	22.1	C	0.73	68.6	**#62.4**
	WBT/R	D	0.89	56.8	**#106.9**	**F**	**1.12**	**116.9**	**#180.6**
	NBL	C	0.76	71.2	61.9	**F**	**1.19**	**178.3**	**#110.3**
	NBT	D	0.81	41.7	114.6	A	0.58	39.8	85.4
	NBR	A	0.34	5.6	16.0	A	0.36	6.3	18.7
	SBL	C	0.71	63.0	m26.9	B	0.70	69.0	m53.8
	SBT	B	0.65	46.2	m72.4	E	0.96	59.5	**#186.9**
	SBR	C	0.80	58.8	**m#93.5**	**F**	**1.39**	**221.8**	**#287.5**
	Overall	**E**	**0.92**	**55.6**	-	**F**	**1.26**	**93.1**	-
Bank Street at Alta Vista Drive *Signalized*	EBL/T	A	0.06	51.9	6.7	A	0.08	57.4	8.1
	EBR	A	0.03	51.3	3.8	A	0.18	60.6	12.8
	WBL	C	0.77	63.6	73.4	D	0.87	76.0	**#114.7**
	WBT/R	C	0.74	60.9	70.9	D	0.85	73.1	**#109.8**
	NBL	A	0.48	62.4	m16.3	B	0.63	64.9	m24.1
	NBT	A	0.49	10.7	m64.6	B	0.64	17.3	m78.7
	NBR	A	0.52	1.8	m20.6	A	0.44	2.7	m18.3
	SBL	A	0.32	60.6	17.9	C	0.72	85.7	**#50.5**
	SBT/R	A	0.39	20.8	86.7	C	0.75	33.3	**#195.4**
	Overall	**A**	**0.59**	**21.8**	-	**C**	**0.78**	**34.6**	-
Walkley Road at NB Airport Parkway *Signalized*	EBT/R	A	0.32	9.4	63.5	A	0.28	6.2	51.0
	WBL	A	0.24	60.9	m7.6	A	0.15	**90.2**	m3.2
	WBT	A	0.28	3.4	34.2	A	0.44	1.3	10.9
	NBL	A	0.16	43.4	16.4	A	0.14	48.4	15.6
	NBR	B	0.70	65.5	50.7	C	0.71	72.7	51.9
	Overall	**A**	**0.41**	**13.0**	-	**A**	**0.51**	**8.8**	-
Walkley Road at Glenhaven Private /Anand Private *Signalized*	EBL	A	0.07	5.6	4.2	A	0.09	4.1	m2.7
	EBT/R	A	0.46	7.4	42.3	A	0.37	5.0	39.2
	WBL	A	0.16	9.8	m5.2	A	0.25	10.2	m8.5
	WBT/R	A	0.36	8.0	46.2	A	0.58	16.1	m88.5
	NBL	A	0.18	19.1	8.8	A	0.34	53.7	26.5
	NBT/R	A	0.19	7.7	6.9	A	0.27	13.8	13.8
	SBL	A	0.12	18.0	6.5	A	0.54	62.1	38.6
	SBT/R	A	0.09	7.9	4.4	A	0.18	17.1	11.3
	Overall	**A**	**0.43**	**8.1**	-	**A**	**0.58**	**14.4**	-
Walkley Road at Banff Avenue *Signalized*	EBT/R	A	0.30	4.9	41.8	A	0.37	5.0	53.1
	WBL/T	A	0.36	5.4	51.3	A	0.47	5.9	72.8
	NBL/R	A	0.28	19.6	10.9	A	0.30	20.6	12.4
	Overall	**A**	**0.37**	**5.7**	-	**A**	**0.45**	**6.0**	-
Bank Street at Access #1 *Unsignalized*	EBR	B	0.04	14.2	0.8	D	0.21	30.6	6.0
	NBT	-	-	-	-	-	-	-	-
	SBT/R	-	-	-	-	-	-	-	-
	Overall	**A**	-	**0.1**	-	**A**	-	**0.3**	-

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 0.90

Delay = average vehicle delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

The Bank Street at Walkley Road intersection may be subject to extended queues on the westbound through/right and southbound right movements during the AM peak hour, and on the westbound left and southbound through movements during the PM peak hour. The eastbound left movement during the AM peak hour and overall intersection, the eastbound left, westbound through/right, northbound left, and southbound right movements during the PM peak hour are additionally over theoretical capacity and may be subject to high delays.

At the intersection of Bank Street at Alta Vista Drive, the westbound left, westbound through/right, southbound left, and southbound through/right movements may exhibit extended queues with high delays on the southbound left movement during the PM peak hour.

The westbound left movement during the PM peak hour at Walkley Road and NB Airport Parkway intersection may be subject to high delays.

2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study area road network. Table 3 summarizes the collision types and conditions in the study area, Figure 11 illustrates the area collisions, and Table 4 summarizes the total collisions for each of the locations analyzed. Collision data are included in Appendix D.

Table 3: Study Area Collision Summary, 2018-2022

		Number	%
Total Collisions		**201**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	37	18%
	Property Damage Only	164	82%
Initial Impact Type	**Approaching**	1	0%
	Angle	30	15%
	Rear end	96	48%
	Sideswipe	42	21%
	Turning Movement	18	9%
	SMV Unattended	2	1%
	SMV Other	7	3%
	Other	5	2%
Road Surface Condition	**Dry**	133	66%
	Wet	40	20%
	Loose Snow	13	6%
	Slush	4	2%
	Packed Snow	5	2%
	Ice	6	3%
Pedestrian Involved		1	0%
Cyclists Involved		7	3%

Figure 11: Study Area Collision Records, 2018-2022

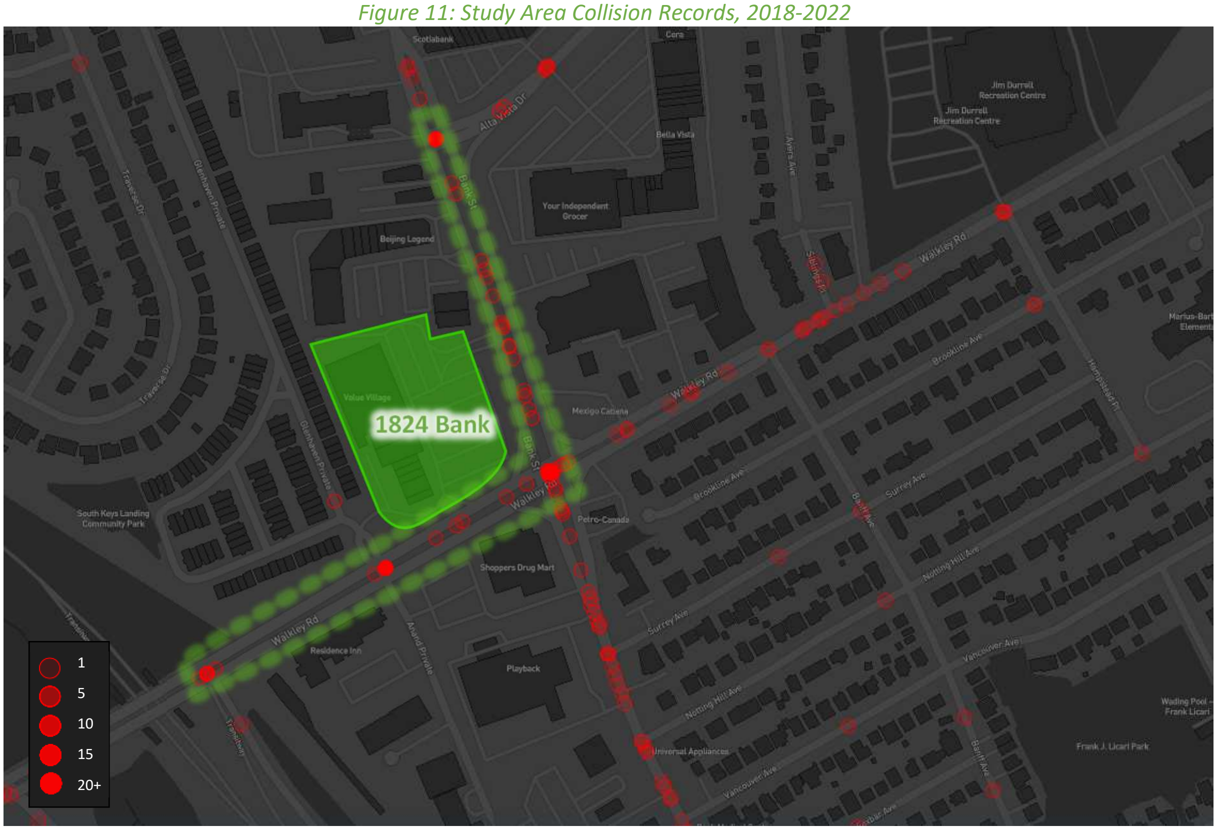


Table 4: Summary of Collision Locations, 2018-2022

	Number	%
Intersections / Segments	**201**	**100%**
Bank St at Walkley Rd	117	58%
Alta Vista Dr at Bank St	29	14%
Walkley Rd at Glenhaven Priv	25	12%
Bank St btwn Alta Vista Dr and Walkley Rd	16	8%
Airport Pkwy/Walkley Rd Nb Off Ramp at Walkley Rd	7	3%
Walkley Rd btwn Bank St and Glenhaven Priv	5	2%

Within the study area, the intersection of Bank Street at Walkley Road, Alta Vista Drive at Bank Street, Walkley Road at Glenhaven Private, and segment of Bank Street between Alta Vista Drive and Walkley Road are noted to have experienced higher collisions than other locations. Table 5, Table 6, Table 7, and Table 8 summarize the collision types and conditions for each location.

Table 5: Bank Street at Walkley Road Collision Summary

		Number	%
Total Collisions		**117**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	18	15%
	Property Damage Only	99	85%
Initial Impact Type	**Approaching**	1	1%
	Angle	18	15%
	Rear end	60	51%
	Sideswipe	22	19%
	Turning Movement	9	8%

		Number	%
Total Collisions		**117**	**100%**
	SMV Unattended	2	2%
	SMV Other	3	3%
	Other	2	2%
Road Surface Condition	**Dry**	75	64%
	Wet	22	19%
	Loose Snow	11	9%
	Slush	1	1%
	Packed Snow	2	2%
	Ice	6	5%
Pedestrian Involved		0	0%
Cyclists Involved		3	3%

The Bank Street at Walkley Road intersection had a total of 117 collisions during the 2018-2022 time period, with 99 involving property damage only and the remaining 18 having non-fatal injuries. Rear end comprised the majority of collision types at this intersection with 60 collisions, followed by 22 sideswipe, 18 angled, nine turning movement, three SMV other collisions with the remaining two collisions each represented as SMV unattended and other, and one collision represented as approaching.

The latest detailed collision records for this intersection were received from the City for the data range of 2017-2021, which is a 5-year period shifted one year earlier than the open data. From this data, a total of 134 collisions were observed with 68 rear end, 25 sideswipe and 21 angled reflecting the general distribution from the open data above. While there is a 17-collision reduction at the intersection moving into 2022, the collision rates for 2017-2021 remained consistent with 24-29 collisions per year.

The rear end collisions are predominantly involving northbound and southbound movements (43 of 68) and on dry conditions (55 of 68). This is consistent with the congested conditions at arterial intersections.

The sideswipe collisions are predominantly due to changing lanes (19 of 25) and generally in the southbound direction (11 of 25) which eight involved lane changes. The southbound approach presents a lane shift for the dual left-turn development and a right-turn lane trap which may both contribute to sideswipe collisions.

The angled collisions break down to eight southbound, six westbound, five northbound and three eastbound. The collisions are distributed through various directions and movements at all four corners. A total of three angle cyclist collisions are noted during dry weather conditions, although the directionality shows no specific pattern or cause. These collisions do not appear to be typical intersection movement/conflicts with one involving a southbound vehicle with a bike turning westbound right, another a southbound vehicle and eastbound bike, and the last one involving an eastbound vehicle and southbound turning right bike.

Given that the Bank Street renewal has been planned and will include protected intersection geometry, it is expected that the angled and sideswipe collisions may be reduced, and the cycling facilities will remove bikes from the roadway. Therefore, no mitigation is required to support this development and no further review is required as part of this study.

Table 6: Alta Vista Drive at Bank Street Collision Summary

		Number	%
Total Collisions		**29**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	5	17%
	Property Damage Only	24	83%
Initial Impact Type	**Angle**	3	10%
	Rear end	13	45%
	Sideswipe	9	31%
	Turning Movement	2	7%
	SMV Other	2	7%
Road Surface Condition	**Dry**	22	76%
	Wet	5	17%
	Loose Snow	1	3%
	Packed Snow	1	3%
Pedestrian Involved		0	0%
Cyclists Involved		1	3%

The Alta Vista Drive at Bank Street intersection had a total of 29 collisions during the 2018-2022 time period, with 24 involving property damage only and the remaining five having non-fatal injuries. The rear end comprised the majority of collision types at this intersection with 13 collisions, followed by nine sideswipe, three angled collisions with the remaining two collisions each represented as turning movement and SMV other.

The latest detailed collision records for this intersection were received from the City for the data range of 2017-2021, which is a 5-year period shifted one year earlier than the open data. From this data, a total of 37 collisions were observed with 18 rear end and 12 sideswipe reflecting the general distribution from open data above. While there is a 8-collision reduction at the intersection moving into 2022, the collision rates for the 2017-2021 remained consistent with 7-9 collisions per year with 2020 having only 5 collisions.

The rear end collisions are predominantly involving northbound or southbound movements (8 and 7 of 18 respectively) and 15 of the 18 collisions in dry conditions. This is consistent with the congested conditions at arterial intersections.

The sideswipe collisions are predominantly due to changing lanes in the southbound direction (5 of 12). The southbound approach widening to three lanes on the south side of the intersection may influence the sideswipe collisions.

Given that the Bank Street renewal has been planned and will include protected intersection geometry, it is expected that the sideswipe collisions may be reduced. A single cyclist collision did occur with a southbound vehicle, although the cyclist movement was unknown so no conclusions can be made. Therefore, no mitigation is required to support this development and no further review is required as part of this study.

Table 7: Walkley Road at Glenhaven Private Collision Summary

		Number	%
Total Collisions		**25**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	7	28%
	Property Damage Only	18	72%
Initial Impact Type	**Angle**	4	16%
	Rear end	10	40%
	Sideswipe	4	16%

		Number	%
Total Collisions		**25**	**100%**
	Turning Movement	5	20%
	SMV Other	1	4%
	Other	1	4%
Road Surface Condition	**Dry**	14	56%
	Wet	7	28%
	Loose Snow	1	4%
	Slush	2	8%
	Packed Snow	1	4%
Pedestrian Involved		1	4%
Cyclists Involved		0	0%

The Walkley Road at Glenhaven Private intersection had a total of 25 collisions during the 2018-2022 time period, with 18 involving property damage only and the remaining seven having non-fatal injuries. The collision types are most represented by rear end with ten collisions, followed by turning movement with five collisions, sideswipe and angled each with two collisions, and the remaining one collision each for SMV other and other.

The latest detailed collision records for this intersection were received from the City for the data range of 2017-2021, which is a 5-year period shifted one year earlier than the open data. From this data, a total of 27 collisions were observed with ten rear end and the remaining at six or less per collision type reflecting the general distribution from open data above. A slight reduction of two collisions is noted at the intersection moving into 2022, the collisions generally occurred during 2018 (11 of 27) and 5 or less per year for the remaining years in the period of 2017-2021. Construction and Walkley Road resurfacing were undertaken during 2018.

Half of the rear end collisions occurred during the 2018 spike in collisions and reduce to a rate of one per year subsequent to the construction activities. One pedestrian collision was noted for the intersection and fell within the 2018 period. It involved a northbound right turning vehicle and has no discernible cause or pattern beyond potential construction staging/activities.

Therefore, no mitigation is required to support this development and no further review is required as part of this study.

Table 8: Segment of Bank Street between Alta Vista Drive and Walkley Road Collision Summary

		Number	%
Total Collisions		**16**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	3	19%
	Property Damage Only	13	81%
Initial Impact Type	**Angle**	4	25%
	Rear end	5	31%
	Sideswipe	4	25%
	Turning Movement	1	6%
	SMV Other	1	6%
	Other	1	6%
Road Surface Condition	**Dry**	12	75%
	Wet	4	25%
Pedestrian Involved		0	0%
Cyclists Involved		2	13%

The segment of Bank Street between Alta Vista Drive and Walkley Road had a total of 16 collisions during the 2018-2022 time period, with 13 involving property damage only and the remaining three having non-fatal injuries. The collision types are most represented by rear end with five collisions, followed by angled and sideswipe each with four collisions, and the remaining one collision each for turning movement, SMV other, and other.

The latest detailed collision records for this segment were received from the City for the data range of 2017-2021, which is a 5-year period shifted one year earlier than the open data. From this data, a total of 18 collisions were observed with six sideswipe, five rear end, four angled collisions, and the remaining at one per collision type reflecting the general distribution from open data above. A slight decrease of two collisions is noted at the intersection moving into 2022, the collision rates for the 2017-2021 remained consistent with 3-5 collisions per year with 2017 having only two collisions.

The sideswipe collisions are predominantly due to changing lanes (4 of 6) and generally in the southbound direction (5 of 6) which three involved lane changes. The southbound approach has a similar condition to the Bank Street at Walkley Road intersection with a lane shift for the dual left-turn development and a right-turn lane trap which may both contribute to sideswipe collisions.

The rear end collisions are all involving northbound or southbound movements and all in dry conditions. This is consistent with the congested conditions.

The angled collisions are eastbound right-out movements from private driveways conflicting with southbound volumes. Similar to the sideswipe collisions, the existing geometry of the roadway likely influences these collisions.

One angle cyclist collision and one turning movement collision are noted during dry weather conditions, although the directionality shows no specific pattern or cause.

Out of 18 collisions, seven involved vehicles turning right either eastbound or southbound, two of which involved cyclists. One cyclist collision was noted to have occurred at or near the site's existing Bank Street access, while the other occurred at or near the existing accesses at 1800 Bank Street. The lack of cycling facilities is considered the primary issue in this location and the future cycletrack will alleviate conflicts with cars and bikes sharing the same lane through lane merges and a wide channelized access.

The Bank Street renewal will improve the existing conditions and address these issues. Therefore, no additional mitigation is required to support this development and no further review is required as part of this study.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

2.3.1.1 Transportation Master Plan Part 1 (2023)

The active transportation projects list includes separated cycling facilities on Walkley Road from Bank Street to the Airport Parkway.

2.3.1.2 Airport Parkway Widening - Brookfield Road to Hunt Club Road

The Airport Parkway Widening was included in Phase One of the Airport Parkway (Brookfield Road to Ottawa Macdonald-Cartier International Airport) and Lester Road Widening (Airport Parkway to Bank Street) Environmental Assessment (EA) Study (2017). The Phase One project includes Airport Parkway widening from two to four lanes between Brookfield Road and Hunt Club Road, a new Airport Parkway southbound off-ramp connecting to Walkley Road with a new roundabout intersection, and a new multi-use pathway along the west side of the Airport Parkway. Construction is tentatively scheduled to begin in 2027. The draft preliminary design of Airport Parkway Widening is provided in Appendix E.

2.3.1.3 Walkley Road West Cycling Facility (Riverside Drive to McCarthy Road)

Cycling facilities are planned on both sides of Walkley Road between Riverside Drive and McCarthy Road, which will provide connections to and from the Rideau River Pathway. Improvements to existing right turn channels at Walkey Road at Riverside Drive intersection are proposed to reduce turning vehicle speeds and provide safer cycling and pedestrian crossings. Improvements proposed at the Walkey Road at Otterson Drive/Springland Drive intersection, including bike boxes to facilitate cyclists left turns from Otterson Drive and Springland Drive and lane changes to a left turn lane and a through/right lane on Walkley to facilitate movements to Otterson Drive and Springland Drive. Walkey Road at McCarthy Road intersection is proposed to be upgraded to a protected intersection with dedicated right and left turn lanes on Walkley Road to facilitate movements to McCarthy Road.

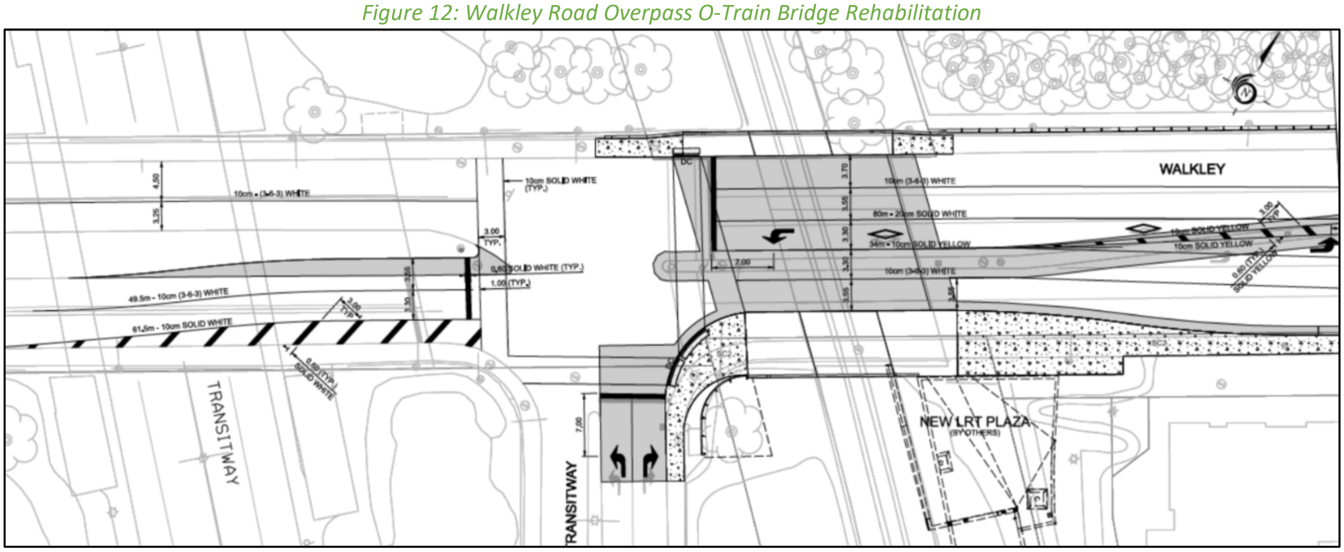
2.3.1.4 Walkley Road Roundabout and Street Modifications

Walkley Road Roundabout and Street Modifications is part of the Airport Parkway Widening Phase 1 Project, street modifications including bike lanes on both sides of the road, lane changes, a two-way left-turn lane between Wexford Way and Southmore Drive East, an eastbound left turn lane proposed at the Wexford Way Intersection, and eastbound left turn prohibition during PM peak at the Wexford Way. The Walkley Road modifications, which are included in the draft preliminary design of Airport Parkway Widening, are provided in Appendix E.

2.3.1.5 Walkley Road Overpass O-Train Bridge Rehabilitation

The Walkley Road Overpass O-Train Bridge Rehabilitation project includes a future bi-directional cycling facility across the new structure. Figure 12 illustrates the Walkley Road Overpass O-Train Bridge Rehabilitation.

Figure 12: Walkley Road Overpass O-Train Bridge Rehabilitation



Source: https://ottawa.ca/en/city-hall/public-engagement/projects/airport-parkway-widening-phase-1-brookfield-road-hunt-club-road
Accessed: November 20, 2023

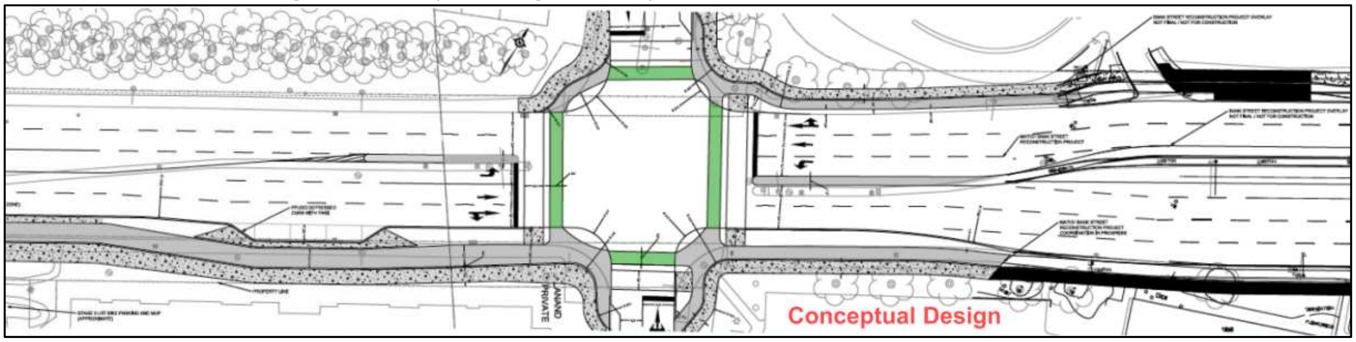
2.3.1.6 O-Train South Extension – Walkley LRT Station and Existing Trillium Line

Walkley station is identified as one of the Trillium Line extension new stations in the Stage 2 Light Rail Transit project and will be converted to accommodate LRT. The anticipated build-out year of the project is 2024.

2.3.1.7 Walkley Road East Functional Design Study (Walkley LRT Station to Bank Street Renewal)

The intersection of Walkley Road at Anand Private/Glenhaven Private will be converted into a protected intersection to provide safer cycling connections for local residents. Figure 13 illustrates the conceptual design of the intersection.

Figure 13: Conceptual Design – Walkley Road at Anand Private/Glenhaven Private



Source: https://ottawa.ca/en/city-hall/public-engagement/projects/airport-parkway-widening-phase-1-brookfield-road-hunt-club-road
Accessed: November 20, 2023

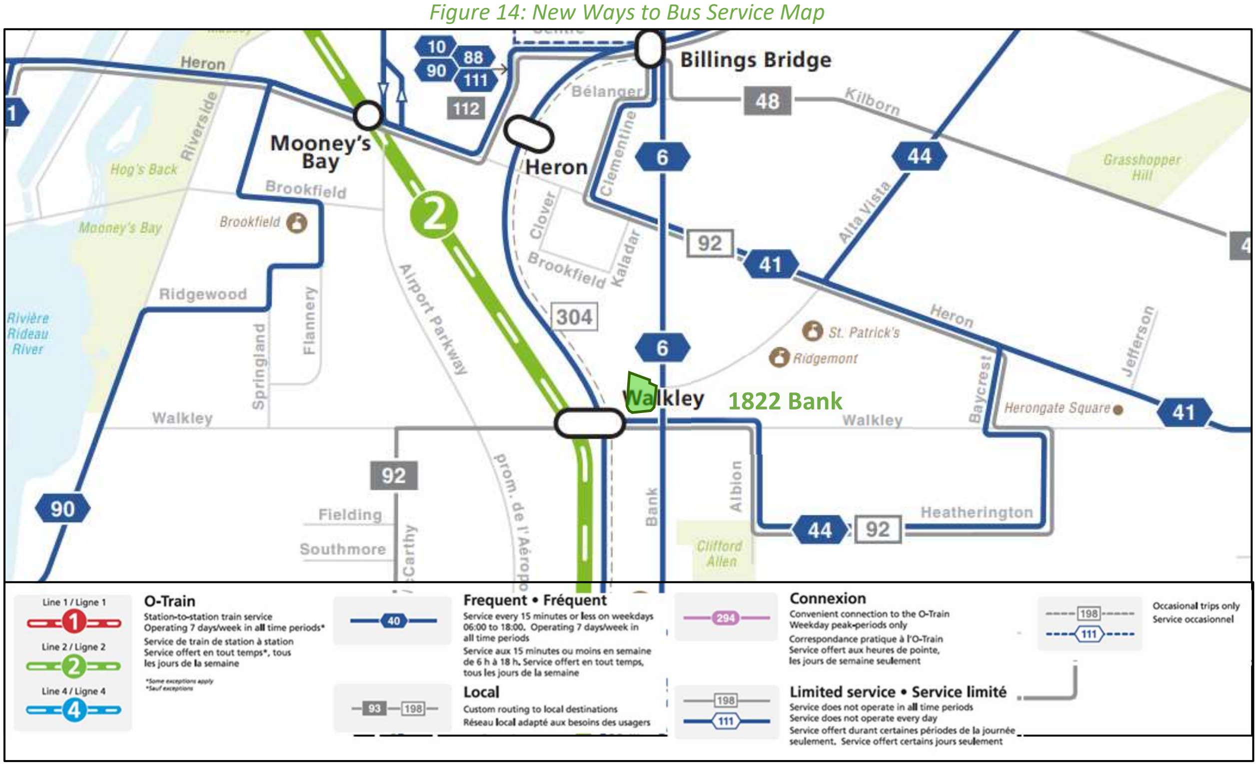
2.3.1.8 Bank Street Renewal, Riverside Drive (westbound) to Ledbury Avenue

Bank Street renewal including cycle tracks along both sides of Bank Street and protected intersection at Walkley Road. Phase One includes Bank Street from Riverside Drive westbound to Collins Avenue, and Phase Two includes Collins Avenue to Ledbury Avenue. Phase One is planned to begin in spring 2024, and Phase Two will begin following the completion of Phase 1. The functional design plan for Bank Street renewal is included in Appendix F.

2.3.1.9 OC Transpo's New Ways to Bus

Responding to recent ridership trends and anticipating the upcoming completion of the Stage 2 expansion of LRT service within the City, the OC Transpo bus service is planned to be recalibrated to focus on frequency, local service in neighbourhoods, and connections to key destinations. These changes are expected in 2024, and the new service map is illustrated in Figure 14.

Figure 14: New Ways to Bus Service Map



Source: https://www.octranspo.com/en/plan-your-trip/service-changes/new-ways-to-bus#new-network Accessed: August 30, 2024

2.3.2 Other Study Area Developments

At the time of this report, no other development applications were available for the adjacent properties.

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of:

- Walkley Road at:
  - NB Airport Parkway
  - Glenhaven Private/Anand Private
  - Banff Avenue
- Bank Street at:
  - Walkley Road
  - Alta Vista Drive
  - Access #1

The boundary road will be Bank Street, Walkley Road and Glenhaven Private, and no screenlines are present within proximity to the site.

3.2 Time Periods

As the proposed development is a mixed-use development with residential units and commercial units, therefore, the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2035. As a result, the full build-out plus five years horizon year is 2040.

4 Development-Generated Travel Demand

4.1 Mode Shares

Examining the mode shares recommended in the TRANS Trip Generation Manual (2020) for the subject district, derived from the most recent National Capital Region Origin-Destination survey (OD Survey), the existing average district mode shares by land use for Alta Vista have been summarized in Table 9.

Table 9: TRANS Trip Generation Manual Recommended Mode Shares – Alta Vista

Travel Mode	Multi-Unit (High-Rise)		Commercial Generator		TOD Area
	AM	PM	AM	PM	AM & PM
Auto Driver	38%	45%	64%	60%	15%
Auto Passenger	12%	16%	9%	20%	5%
Transit	42%	28%	12%	9%	65%
Cycling	2%	2%	1%	0%	15%
Walking	7%	9%	14%	11%	
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Being within 600 metres-walk of the Walkley Bus Rapid Transit (BRT) station and future Walkley Light Rail Transit (LRT) station, higher transit and walking mode share targets are considered achievable at this location. The modified mode share targets are proposed for the development and are summarized in Table 10.

Table 10: Proposed Development Mode Shares

Travel Mode	Multi-Unit (High-Rise)		Strip Retail Plaza (<40k)	
	AM	PM	AM	PM
Auto Driver	23%	30%	49%	45%
Auto Passenger	6%	11%	9%	20%
Transit	62%	48%	27%	24%
Cycling	2%	2%	1%	0%
Walking	7%	9%	14%	11%
Total	**100%**	**100%**	**100%**	**100%**

4.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020) and the vehicle trip rates and derived person trip rates for commercial component from the ITE Trip Generation Manual 10th Edition (2017) using the City-prescribed conversion factor of 1.28. Table 11 summarizes the person trip rates for the proposed residential land uses for each peak period and the person trip rates for the non-residential land uses by peak hour.

Table 11: Trip Generation Person Trip Rates

Land Use	Land Use Code	Peak Period	Vehicle Trip Rate	Person Trip Rates
Multi-Unit (High-Rise)	221 & 222 (TRANS)	AM	-	0.80
		PM	-	0.90
Land Use	**Land Use Code**	**Peak Hour**	**Vehicle Trip Rate**	**Person Trip Rates**
Strip Retail Plaza (<40k)	822 (ITE)	AM	2.36	3.02
		PM	6.59	8.44

Using the above person trip rates, the total person trip generation has been estimated. Table 12 summarizes the total person trip generation for the residential land uses and for the non-residential land uses.

Table 12: Person Trip Generation by Peak Period/Hour

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit (High-Rise)	1,426	354	787	1141	744	539	1283
Land Use	**Units / GFA**	**AM Peak Hour**			**PM Peak Hour**		
		In	**Out**	**Total**	**In**	**Out**	**Total**
Strip Retail Plaza (<40k)	8,073 sq. ft.	14	10	24	34	34	68

Internal capture rates from the ITE Trip Generation Handbook 3rd Edition have been assigned to the development's retail component for mixed-use developments. The rates summarized in Table 13 represent the percentage of trips to/from the retail use based on the residential component.

Table 13: Internal Capture Rates

Land Use	AM		PM	
	In	Out	In	Out
Residential to/from Shopping Centre	17%	14%	10%	26%

Pass-by reductions applied to the retail trip generation at a rate of 40% have been included using the recommended value presented in the ITE Trip Generation Manual 11th Edition (2021) for the most similar land use with a recommended rate, "Retail (40k – 150k sq. ft.)".

Using the above proposed mode share targets, the internal capture and pass-by rates, and the person trip rates, the person trips by mode have been projected. Trip generation by peak hour has been forecasted using the prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential component. Table 14 summarizes the residential trip generation and the non-residential trip generation by mode and peak hour.

Table 14: Trip Generation by Mode

Travel Mode		AM Peak Hour				PM Peak Hour			
		Mode Share	In	Out	Total	Mode Share	In	Out	Total
Multi-Unit (High-Rise)	Auto Driver	**23%**	39	87	126	**30%**	98	71	169
	Auto Passenger	**6%**	10	23	33	**11%**	36	26	62
	Transit	**62%**	120	268	389	**48%**	168	122	290
	Cycling	**2%**	4	9	13	**2%**	7	5	12
	Walking	**7%**	15	32	46	**9%**	35	25	60
	Total	**100%**	**188**	**419**	**607**	**100%**	**344**	**249**	**593**
Strip Retail Plaza (<40k)	Auto Driver	**49%**	0	0	0	**45%**	0	0	0
	Auto Passenger	**9%**	1	1	2	**20%**	6	6	12
	Transit	**27%**	4	2	6	**24%**	8	7	15
	Cycling	**1%**	0	0	0	**0%**	0	0	0
	Walking	**14%**	2	1	3	**11%**	4	3	7
	Internal Capture	*varies*	*-1*	*-1*	*-2*	*varies*	*-2*	*-5*	*-7*
	Pass-by	*40%*	*-6*	*-4*	*-10*	*40%*	*-14*	*-14*	*-28*
	Total	**100%**	**7**	**4**	**11**	**100%**	**18**	**16**	**34**
Total	Auto Driver	-	39	87	126	-	98	71	169
	Auto Passenger	-	11	24	35	-	42	32	74
	Transit	-	124	270	395	-	176	129	305
	Cycling	-	4	9	13	-	7	5	12
	Walking	-	17	33	49	-	39	28	67
	Total	-	**195**	**423**	**618**	-	**362**	**265**	**627**

As shown above, a total of 126 AM and 169 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

4.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel for the residential component, and these patterns were applied based on the build-out of Alta Vista. Table 15 below summarizes the distributions.

Table 15: OD Survey Distribution – Alta Vista

To/From	Residential % of Trips
North	50%
South	15%
East	5%
West	30%
Total	**100%**

4.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Table 16 summarizes the proportional assignment to the study area roadways. Figure 15 illustrates the new site generated volumes, and Figure 16 illustrates pass-by volumes.

Table 16: Trip Assignment

To/From	Inbound Via	Outbound Via
North	20% Bank Street (N) 5% Alta Vista (E) 15% Walkley Road (E) 10% Walkley Road (W)	30% Bank Street (N) 5% Alta Vista (E) 15% Walkley Road (E)
South	13% Bank Street (S) 2% Airport Parkway (S)	13% Bank Street (S) 2% Airport Parkway (S)
East	5% Walkley Road (E)	5% Walkley Road (E)
West	20% Walkley Road (W) 10% Bank Street (N)	20% Walkley Road (W) 10% Bank Street (N)
Total	**100%**	**100%**

Figure 15: New Site Generation Auto Volumes

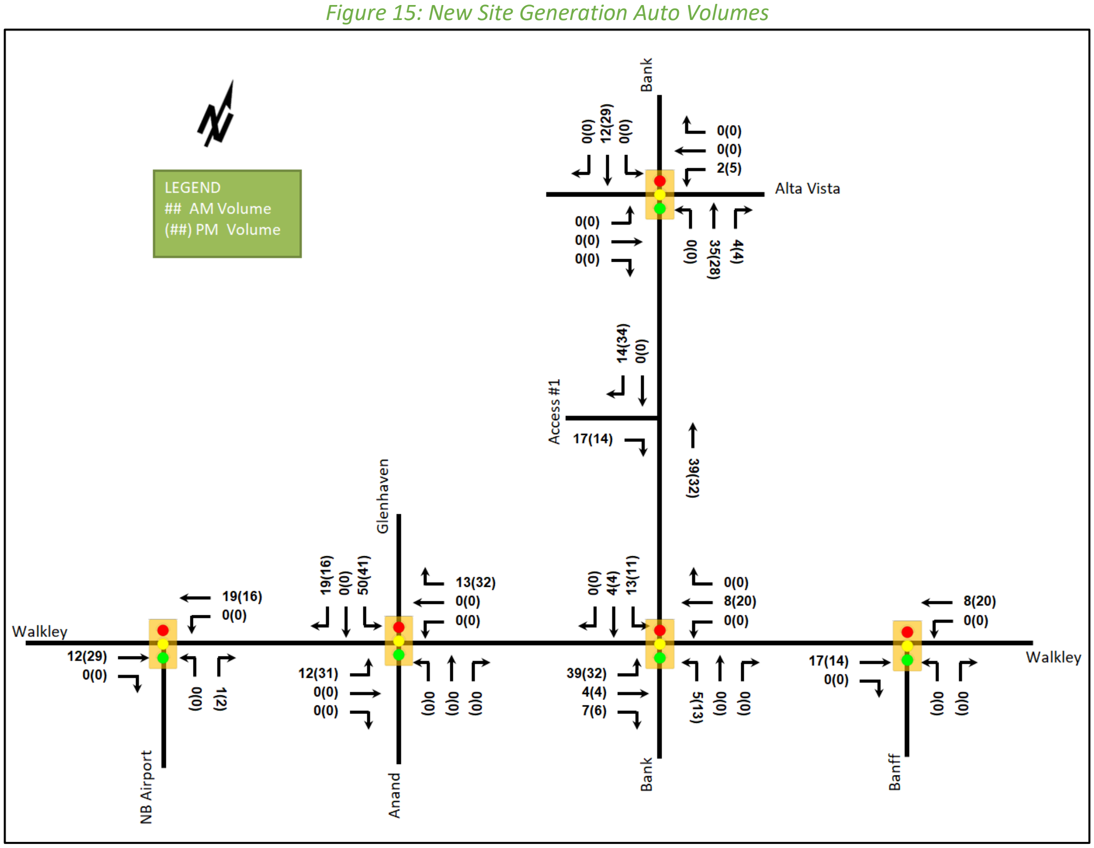
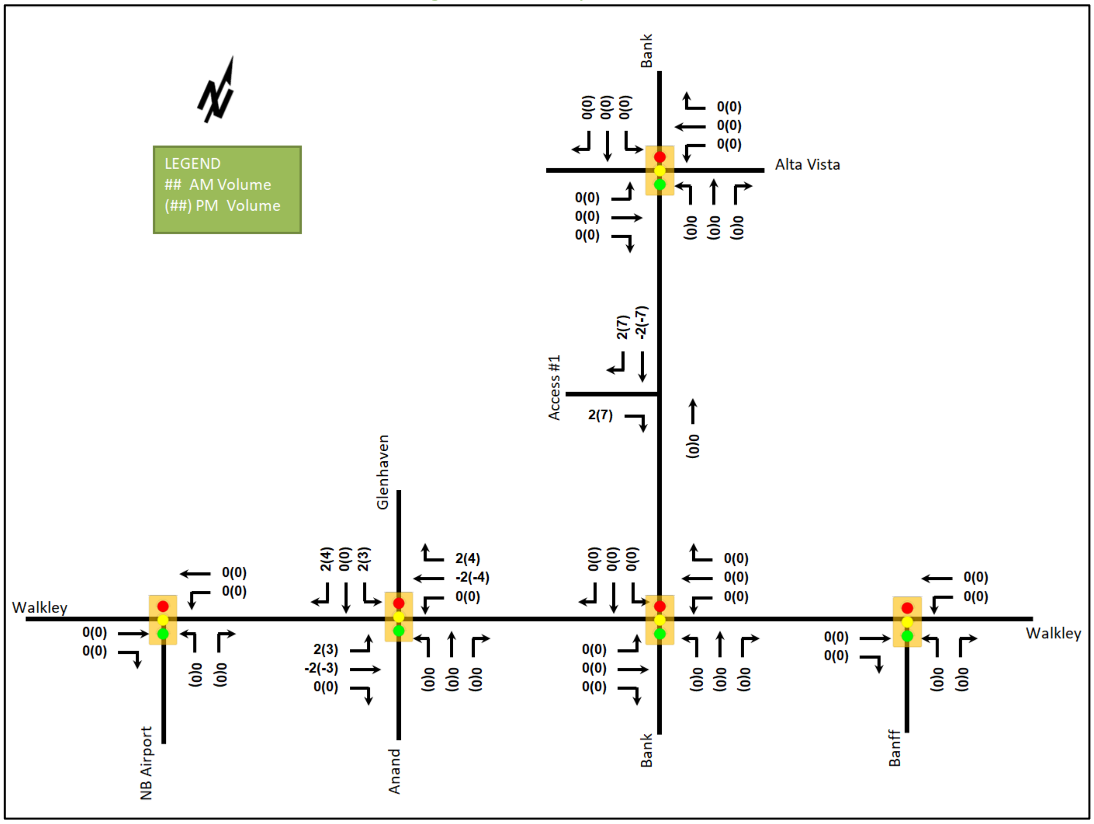


Figure 16: Pass-by Volumes



4.5 Trip Reductions

The existing turning movement counts for the Walkley centre accesses were acquired from The Traffic Specialist and were included in Appendix G. Based on the recommended value presented in the ITE Trip Generation Manual 11th Edition (2021), a pass-by rate of 40% has been assumed, and the pass-by trips and primary auto trips for the existing site have been summarized in Table 17. Table 18 compares the existing primary auto trips and forecasted site-generated primary auto trips. Figure 17 illustrates existing primary auto trip reductions, Figure 18 illustrates existing pass-by trip reassignment, Figure 19 illustrates total auto trip reductions from the existing site, and Figure 20 illustrates net auto trips.

Table 17: Existing Primary Auto Trip and Pass-By Trip Volumes

Scenario	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing Total Trip	80	38	118	136	141	277
Existing Pass-By (40%)	*32*	*15*	*47*	*54*	*55*	*109*
Existing Primary Auto Trip	*48*	*23*	*71*	*82*	*86*	*168*

Table 18: Existing Primary Auto Trip Volumes vs Forecasted Primary Auto Trip Volumes

Scenario	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing Primary Auto Trip	-48	-23	-71	-82	-86	-168
Proposed Primary Auto Trip	39	87	126	98	71	169
Difference	**-9**	**+64**	**+55**	**+16**	**-15**	**+1**

Figure 17: Existing Primary Auto Trip Reductions

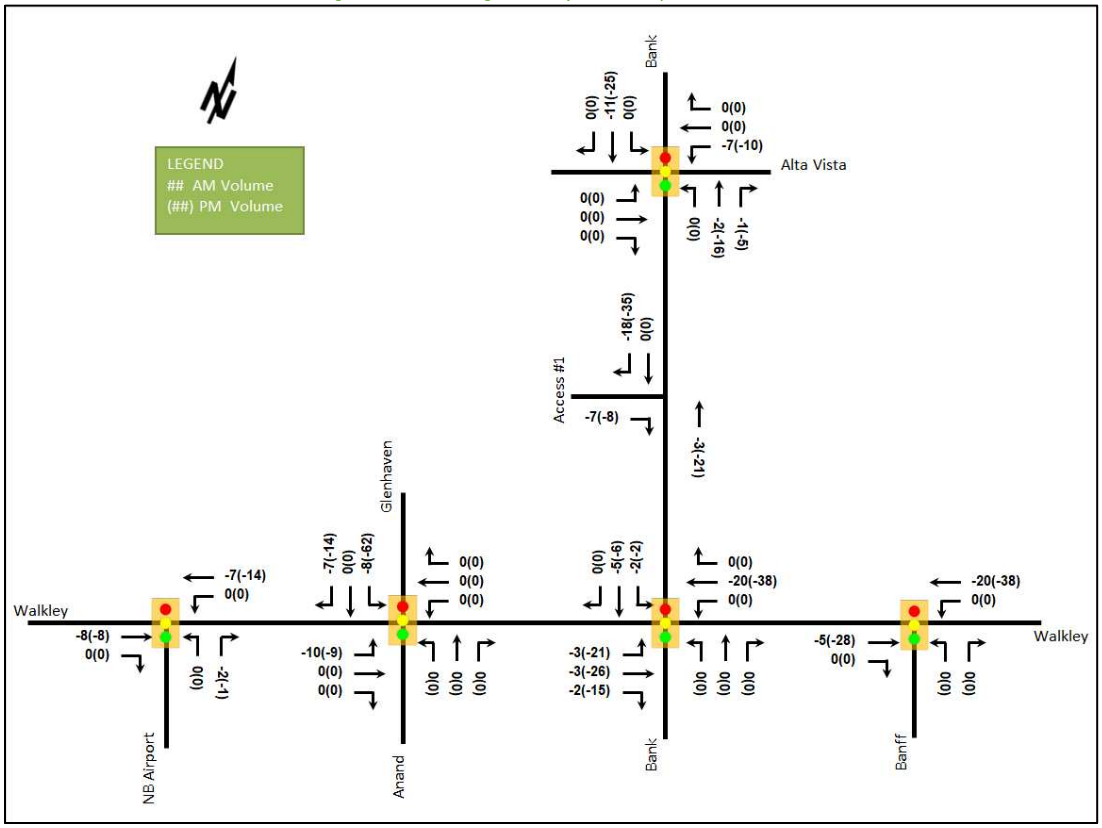


Figure 18: Existing Pass-By Trip Reassignment

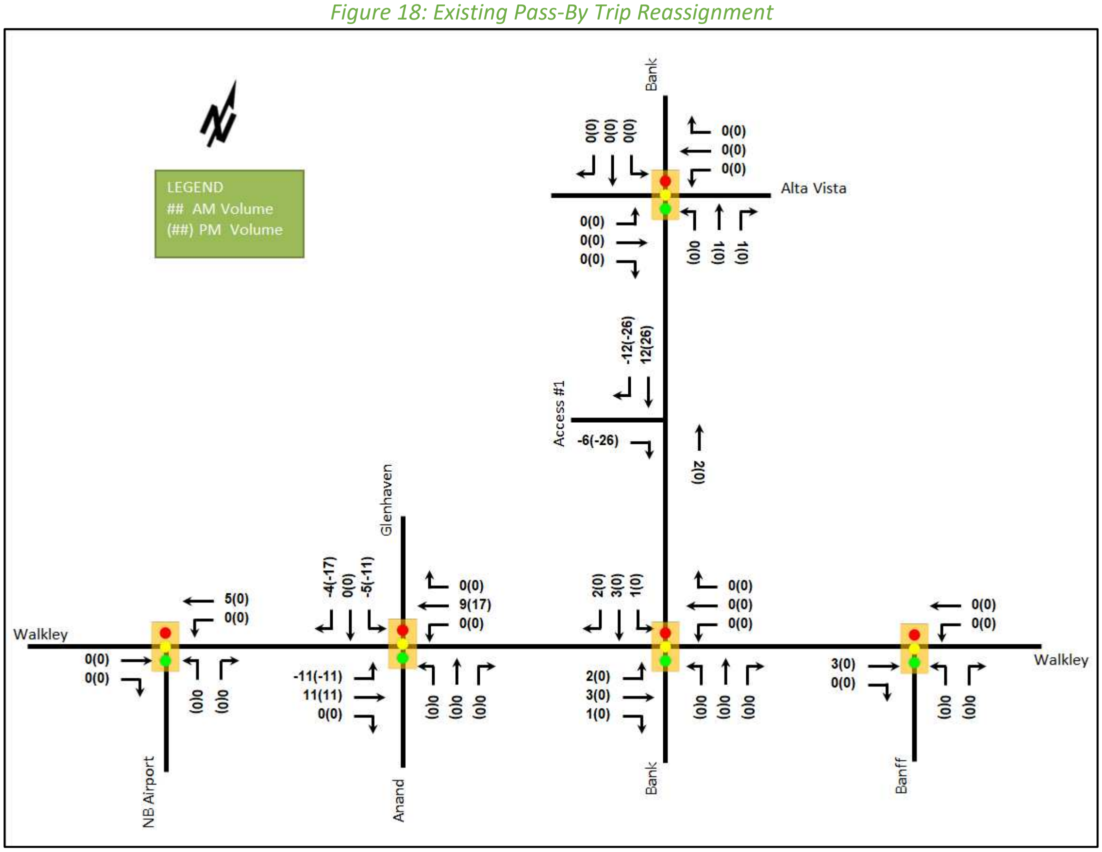


Figure 19: Existing Total Trip Reductions/Reassignment

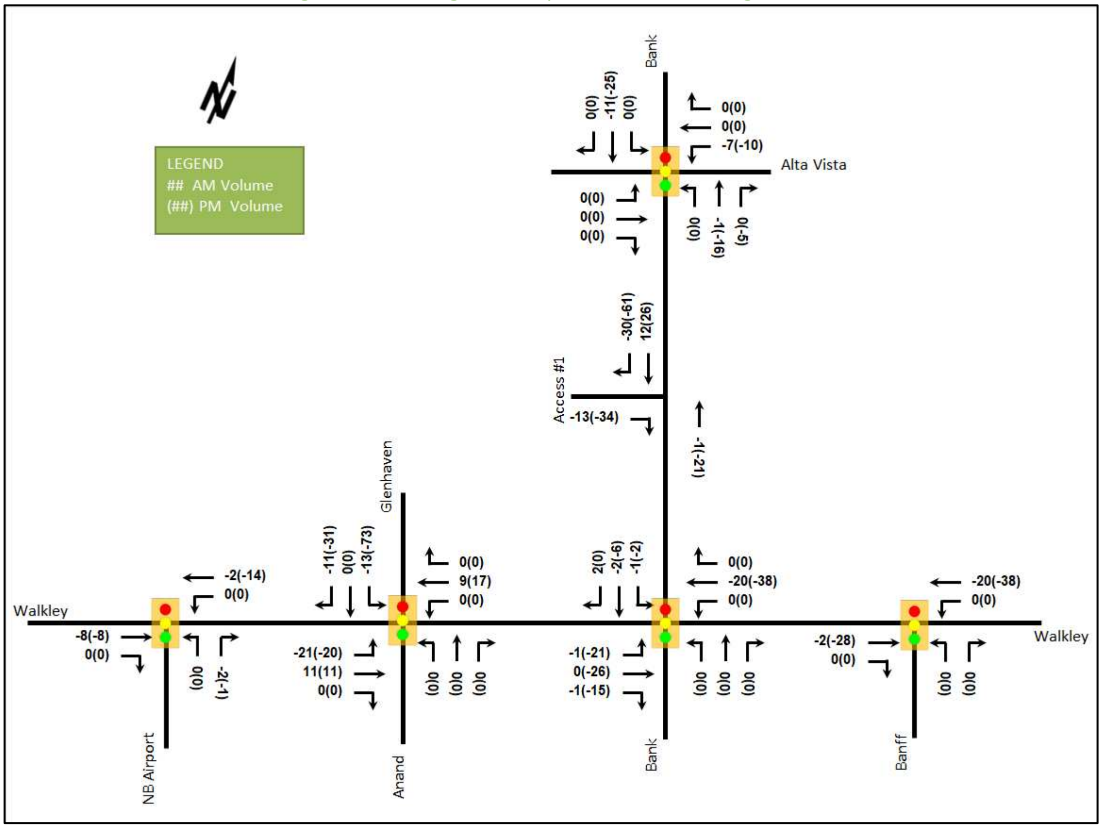
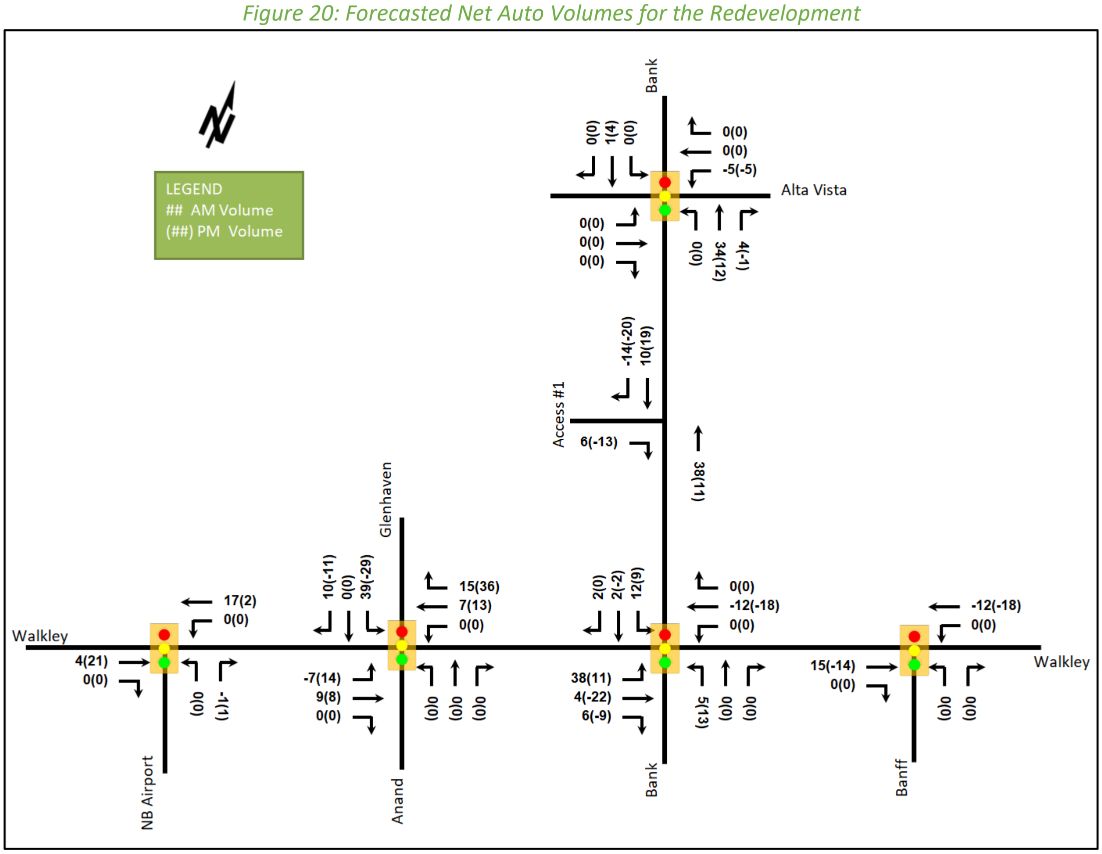


Figure 20: Forecasted Net Auto Volumes for the Redevelopment



5 Exemption Review

Table 19 summarizes the exemptions for this TIA.

Table 19: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
Development Design	4.1.2 Circulation and Access	Only required for site plan and zoning by-law applications	Required
	4.1.3 New Street Networks	Only required for plans of subdivision	Required
Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Required
Boundary Street Design		All applications	Required
Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required
Network Impact			
Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered when the development generates more than 75 auto or transit trips	Required (transit trips above 75 veh)
Demand Rationalization		Only required when one or more other Network Impact Modules when the development generates more than 75 auto trips	Exempt
Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site generated traffic is expected to utilize between an arterial road and the site's access: 1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: • School (within 250m walking distance); • Park; • Retirement / Older Adult Facility (i.e. long-term care and retirement homes); • Licenced Child Care Centre; • Community Centre; or • 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route.	Exempt

Module	Element	Explanation	Exempt/Required
		3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision; 4. At least 75 site-generated auto trips; 5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	
Transit	4.7.1 Transit Route Capacity	Only required when the development generates more than 75 transit trips	Required
	4.7.2 Transit Priority Requirements	Only required when the development generates more than 75 auto trips	Exempt (net trips below 75 veh)
Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Required
Intersection Design	4.4.1-2/4.9.1 Intersection Control	Only required when the development generates more than 75 auto trips	Exempt (net trips below 75 veh)
	4.4.3/4.9.2 Intersection Design	Only required when the development generates more than 75 auto trips	Exempt (net trips below 75 veh)

6 Development Design

6.1 Design for Sustainable Modes

The proposed development is mixed-use buildings, primarily residential and including a ground floor commercial/retail component. Parking for vehicles is primarily provided underground and bicycle parking is primarily provided within a secure room underground. Bike racks are proposed near each tower at the main entrances. Short-term surface parking is provided along the internal drive aisles in front of the park and Buildings 1, 3, and 4. Hard surface connections are proposed between the building entrances, and a pedestrian connection is provided between the parking entrance at Building 1 and Walkley Road, making a direct connection towards the Walkley Transitway / LRT Station. A 1.8-metre sidewalk is proposed along the park and connects to a 2.0-metre sidewalk along the east side of the new local road. The proposed sidewalks will connect to the existing sidewalks on Bank Street and Walkley Road. Future cycle tracks will be provided along Bank Street and Walkley Road. Raised crossings are proposed at private intersections within the site. A bus stop will be located on Walkley Road south of building 2.

The infrastructure TDM checklist is provided in Appendix H.

6.2 Circulation and Access

A new local road will be constructed on the western boundary of the site, and function as the primary access location for the development. Four private accesses will connect to the local road, two for the private drive aisles and two connections to the underground garage ramps for Building 1 and Building 4.

Short-term surface parking is provided along the internal drive aisles in front of the park and Buildings 1, 3, and 4. Loading and garbage areas are provided between Building 1 and 2, north side of Building 3, and south side of

Building 4. Vehicles will be accessed either through the primary entrances on the new local road or from the existing access on Bank Street.

The private drive aisles are proposed as 7.0 metre wide with parking bays provided near building entrances and along the open space frontage. Raised crossings will be provided at all four corners of the open space and at the anticipated raised crossing of the future sidewalk and cycletrack along Bank Street. These raised locations will provide additional traffic calming within the site, at both connection points to the new local road, and permit raised crossing locations for ease of travel within and through the site for active mode users.

Standard fire lanes that meet the 6-meter width and 12-meter center radii requirements are provided throughout the site, except for the northwest corner at Building 3 and the southwest corner at the park, which have smaller center radii. Although these two corners do not meet the standard fire lane requirements, emergency vehicles are still permitted to circulate on the site, and the turning templates are provided in Appendix I.

The garbage collection vehicle and move-in trucks were reviewed to confirm movements will be permitted on site, and the turning templates are provided in Appendix I.

Sidewalks are proposed along the east side of the new local road and around the park to allow pedestrians to access the park from each building. Commercial spaces are proposed on the east side of Buildings 2, 3, and 4, and hard surface connections are planned between the building entrances to provide pedestrian access to the site.

6.3 New Street Networks

A new 18.0 metre local road is proposed to the west of the site and will connect to Glenhaven Private. The new road will include the allocation of buffer space adjacent to the townhomes, a 7.0 metre road width and a 2.0-metre sidewalk along the east side of the road. The new local road speed limit will be 30 km/h. To facilitate the dead end of the new local road, a modified cul-de-sac will be implemented to permit the turnaround movements of Municipal vehicles until such time as the road is extended to the north. The right-of-way width beyond the 18.0 metres is located on a temporary easement. The new local road features a 90-degree turn to connect with the north leg of the Walkley Road and Glenhaven Private intersection. The proposed sidewalk will link to the existing sidewalk on the east side of Glenhaven Private and will provide connections to the cycle track and sidewalks along Walkley Road and Bank Street.

7 Parking

7.1 Parking Supply

The site provides a total of 979 vehicle parking spaces, including 20 visitor parking at grade, 95 visitor parking underground, and 864 residential parking underground.

According to the zoning by-law, within 600 metres of a rapid-transit station shown on Schedule 2A or 2B, the minimum vehicle parking requirement for residential units is 0.5 spaces per dwelling unit, and the minimum visitor parking requirement is 0.1 spaces per dwelling unit. No off-street motor vehicle parking is required to be provided for commercial use with a gross floor area of 500 square metres or less. The minimum parking required for Building 1 is 131 spaces for residents and 25 spaces for visitors. The minimum parking required for Building 2 is 215 spaces for residents and 30 spaces for visitors. The minimum parking required for Building 3 is 181 spaces for residents and 30 spaces for visitors. The minimum parking required for Building 4 is 187 spaces for residents and 30 spaces for visitors. A total of 713 residential parking and 115 visitor parking spaces are required.

The proposed vehicle parking exceeds the parking zoning by-law minimum requirements, and the visitor parking spaces meet the parking zoning by-law minimum requirements.

Conversely, the maximum vehicle parking requirement within 600 metres of a rapid-transit station shown on Schedule 2A or 2B, is 1.75 spaces per residential dwelling unit, and 4 spaces per 100 square metres of commercial/retail space. The maximum vehicle parking requirement for the residential use is 2496 spaces, and the maximum vehicle parking requirement for the commercial/retail use is 30 spaces. The proposed vehicle and meet the zoning by-law maximum requirements.

According to the zoning by-law, within Area C on Schedule 1, the minimum bicycle parking requirement for is for residential units is 0.5 spaces per dwelling unit, as determined by the zoning by-law, totals 713 spaces. A total of 713 bicycle parking spaces are proposed to be shared between residential and commercial units, and these proposed spaces meet the zoning by-law minimum requirements.

Based on the City of Ottawa Accessibility Design Standards (2015), the total number of accessible spaces required is seven spaces with three Type A and four Type B. It is recommended that at least three Type A and four Type B parking spaces be provided to meet the City of Ottawa Accessibility Design Standards (2015) requirements.

8 Boundary Street Design

Table 20 summarizes the MMLOS analysis for the boundary streets of Bank Street and Walkley Road. The boundary street analysis is based on the policy area of "Within 600 m of a rapid transit station". It is expected that planned projects along the boundary streets of Bank Street and Walkley Road will be completed and have been considered in the future conditions. The MMLOS worksheets have been provided in Appendix J.

Table 20: Boundary Street MMLOS Analysis

Segment	Condition	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS	
		PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target
Bank Street	Existing	**D**	A	**E**	C	D	D	A	D
	Future	**C**	A	A	C	D	D	A	D
Walkley Road	Existing	**D**	A	**E**	C	D	A	A	D
	Future	**C**	A	A	C	D	A	A	D

Bank Street and Walkley Road do not meet the pedestrian targets due to traffic volumes and speed (> 50 km/h). To meet the theoretical pedestrian LOS targets, the operating speed would need to be less than 30 km/h or the curb lane vehicle volumes would need to be reduced to below 3000 AADT. The arterial roadways will not meet these targets.

Bank Street and Walkley Road do not meet the bicycle targets in the existing condition, although once the renewal is completed in this area, the bicycle targets will be met.

9 Access Intersections Design

9.1 Location and Design of Access

A new local road will be constructed on the western boundary of the site, which will connect to Glenhaven Private and function as the primary access location for the development. Two private drive aisles and two underground ramp entrances are proposed to access the new local road, the access will remain on Bank Street and the existing Walkley Road access will be removed.

No minimum throat length requirements are provided by the TAC Geometric Design Guidelines and the throat lengths provided at the various accesses to the local road are proposed as:

- Building 4 underground garage access – approximately 1.6 metres to the temporary turnaround area, which will become 13.0 metres once the local road continues north and the typical right-of-way is reinstated
- Northern drive aisle access – approximately 4.0 metres
- Southern drive aisle access – approximately 4.2 metres
- Building 1 underground garage access – approximately 4.4 metres

The drive aisle accesses on the new local roads are 7.0 metres wide and the underground ramp accesses are 6.5 metres wide. These meet the private approach by-law minimum and maximum access width requirements. The distance between proposed accesses is approximately 29.0 metres between the Building 4 underground ramp access and the northern drive aisle access, 57.5 metres between the northern and southern drive aisle accesses, and 13.0 metres between the southern drive aisle access and the Building 1 underground ramp access. While the private approach by-law only permits two access locations along the local road frontage, the accesses meet the minimum separation required for accesses on the same site with the exception of the Building 1 underground ramp access and the southern drive aisle access due to the turning radii required for garbage trucks and fire access, as the accesses themselves are beyond the 9-metre offset distance requirement. This is further mitigated by the single loaded nature of the new local road, which will only have access located on the east side of the roadway.

As the accesses are not being provided along Walkley Road, and a second access is not being proposed along Bank Street, the additional accesses along the local road are considered supportable and does not pose an undue risk to the operation of the local road in the future.

Sidewalks are proposed along the new local road, and the proposed accesses on will the new local road comply with the City of Ottawa standard drawing SC7.1.

The Bank Street access is situated 75 meters from the Bank Street and Walkley Road intersection. The Transportation Association of Canada (TAC) recommends an access should be located a minimum of 70 metres from a signalized intersection and to be clear of a left-turn storage length plus a bay taper. Although the access on Bank Street will meet the 70-meter clearance, the access will be within the left-turn lane. The left-turn lane is over 170 metres long and spans the block length to the northbound left-turn lane at Alta Vista Drive. The length and design of the left-turn lanes along Bank Street do not permit accesses to be located outside of the storage and taper lengths, resulting in this configuration being a common condition experienced along the corridor. The Bank Street access will be reconstructed as part of the development and Bank Street Renewal project, removing the channelized configurations that is over 14 metre wide, and replacing it with an access configuration that will meet the private approach by-law and current City standards. The proposed access width is 7.7 metres, incorporating the Bank Street Renewal sidewalk and cycletrack. This will be an improved condition with a narrower access to slow down vehicle speeds, improve visibility for drivers and pedestrians, reduce crossing distance, and reduce the likelihood of accidents and enhance safety for pedestrians and cyclists.

The Bank Street access throat length is 45 meters, which exceeds the TAC requirement of 40 meters for apartments of more than 200 units. It is noted that the Building 3 has loading and garbage located 21.5 metres, from the end of the corner radii, which is within this length. The distance measured from the future Bank Street to the first conflict point on-site is 35 meters. Given that the new local road will function as the primary access and lower volumes are expected for accessing the Building 3 loading and garbage zone, the throat length for the Bank Street access is considered acceptable.

10 Transportation Demand Management

10.1 Context for TDM

The mode shares used within the TIA represent a shift from auto modes to transit modes. Overall, the modal shares are likely to be achieved and supporting TDM measures should be provided.

Total bedrooms within the development are subject to the final unit count and layout selections by purchasers. No age restrictions are noted.

10.2 Need and Opportunity

The subject site has been assumed to rely predominantly on transit ridership with the proximity to the Walkley Bus Rapid Transit (BRT) station and future Walkley Light Rail Transit (LRT) station, and those assumptions have been carried through the analysis.

10.3 TDM Program

The "suite of post occupancy TDM measures" has been summarized in the TDM checklists for the commercial and residential land uses. The checklist is provided in Appendix H. The key TDM measures recommended include:

- Display local area maps with walking and cycling routes, and transit route information and schedules at major entrances
- Provide a multimodal travel option information package to new residents
- Inclusion of a 1-month Presto card for first time apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of each building
- Unbundle parking cost from purchase price, rental costs, or long-term parking for the commercial
- Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)

11 Background Network Travel Demands

11.1 Transportation Network Plans

The transportation network plans discussed in Section 2.3 did not identify any transit improvements in proximity to the site and no changes are anticipated for future travel patterns.

12 Transit

12.1 Route Capacity

In Section 5.1 the trip generation by mode was estimated, including an estimate of the number of transit trips that will be generated by the proposed development. Table 21 summarizes the transit trip generation.

Table 21: Trip Generation by Transit Mode

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Transit	Varies	124	270	395	176	129	305

The proposed development is anticipated to generate an additional 395 AM and 305 PM peak hour two-way transit trips. From the trip distribution found in section 5.3, these values can be further broken down. Table 22 summarizes forecasted site-generated transit ridership trips by direction and the equivalent bus loads. It is anticipated that most of the trips to the north, east, and west rely on the Walkley rapid transit stations for the majority of transit needs.

Table 22: Forecasted Site-Generated Transit Ridership

Direction	AM Peak Hour		PM Peak Hour		Service Type	Approximate Equivalent Peak Hour/Direction Bus Loads
	In	Out	In	Out		
North	62	135	88	65	LRT, Bus	Two-and-half of a standard buses
South	19	41	26	19	LRT, Bus	Three-quarters of a standard bus
East	6	12	9	6	Bus	One-quarter of a standard bus
West	37	81	53	39	Bus	One and a half of a standard bus

The transit ridership in the area was provided by OC Transpo for the study area routes, including boarding, alighting, and average loads, and it is included in Appendix K. It is noted that boardings and alightings are total values per bus over the peak period, and average load at departure is per bus within the peak period. Overall, residual capacity is observed at all nearby bus stops except for route #93, which may have average bus loads close to the standard bus load of 55 people per bus. Given the transit network at this location, this is a not a prohibitive constraint on the proposed mode share or forecasted ridership.

Based on the existing transit service identified in Section 2.2.5 and the new service map illustrated in Section 2.3.1.9, an additional standard bus may be required to accommodate the site-generated transit trips to and from the west.

Given that the future Walkley LRT station will be within a 600-metre walk from the site, which provide travel to/from north and south, and residual capacity is observed at nearby bus stops based on the existing average load at departure, it is anticipated that the existing service can accommodate site-generated transit trips to/from the north and south.

13 Network Concept

Being closer to the Walkley BRT station and the future Walkley LRT station, the transit mode share is achievable. The net site-generated trips have minimal impact on the road network. The planned projects along Bank Street and Walkley Road are expected to increase transit and active mode shares and support the area. No changes are required to the road and transit network.

14 Summary of Improvements Indicated and Modifications Options

The following summarizes the analysis and results presented in this TIA report:

Proposed Site and Screening

- The proposed redevelopment consists of up to 1,426 residential units, approximately 750 m2 of ground floor retail space, and an internal public park
- A total of 979 vehicle parking and 713 bicycle parking spaces are proposed
- A new local road will be constructed on the western boundary of the site, and function as the primary access location for the development
- Two private roadways and two underground ramp entrances are proposed to access the new local road
- The access will remain on Bank Street and the existing Walkley Road access will be removed
- The anticipated full build-out horizon is 2035 with construction occurring in multiple phases
- The trip generation, location, and safety triggers were met for the TIA Screening

Existing Conditions

- Bank Street, Walkley Road, and Airport Parkway are arterial roads, and Alta Vista Drive is a major collector road in the study area

- Banff Avenue is a City of Ottawa local road, and Anand Private and Glenhaven Private except for the north leg of the intersection at Walkley and Anand Private are private local road
- Bike lanes are present on both sides of Alta Vista Drive east of 2679 Alta Vista Drive access
- Within the 2023 Transportation Master Plan – Part 1, Bank Road, Walkley Road, and Alta Vista Drive are cross-town bikeways
- Capacity issues are noted on several movements at Bank Street at Walkley Road intersection
- Within the study area, the intersection of Bank Street at Walkley Road, Alta Vista Drive at Bank Street, Walkley Road at Glenhaven Private, and the segment of Bank Street between Alta Vista Drive and Walkley Road are noted to have experienced higher collisions than other locations
- One cyclist collision was noted to have occurred at or near the site's existing Bank Street access
- The lack of cycling facilities is considered the primary issue on Bank Street between Alta Vista Drive and Walkley Road, and the future cycletrack will alleviate conflicts with cars and bikes sharing the same lane through lane merges and a wide channelized access
- The Bank Street renewal will improve the existing conditions and address collisions on Bank Street between Alta Vista Drive and Walkley Road. Therefore, no additional mitigation is required to support this development, and no further review is required as part of this study

Planned Conditions

- Separated cycling facilities on Walkley Road from Bank Street to the Airport Parkway are included in the active transportation projects
- Airport Parkway Widening, Walkley Road West Cycling Facility, Walkley Road Roundabout and Street Modifications, Walkley Road Overpass O-Train Bridge Rehabilitation, O-Train South Extension – Walkley LRT Station and Existing Trillium Line, Walkley Road East Functional Design Study, and Bank Street Renewal were noted in the placed conditions

Development Generated Travel Demand

- The proposed development is forecasted produce 618 two-way people trips during the AM peak hour and 627 two-way people trips during the PM peak hour
- Of the forecasted people trips, 126 two-way trips will be vehicle trips during the AM peak hour and 169 two-way trips will be vehicle trips during the PM peak hour
- Of the forecasted trips, 50 % are anticipated to travel north, 15 % to the south, 5% to the east, and 30 % to both the west
- The existing site was estimated to have 71 two-way vehicle trips during the AM peak hour and 168 two-way vehicle trips during the PM peak hour
- The existing site was estimated to have 47 two-way pass-by trips during the AM peak hour and 109 two-way pass-by trips during the PM peak hour
- The net primary auto trips were estimated to be 55 two-way vehicle trips during the AM peak hour and one two-way vehicle trips during the PM peak hour

Development Design

- Four private accesses will connect to the local road, two for the private drive aisles and two connections to the underground garage ramps for Building 1 and Building 4
- Parking for vehicles is primarily provided underground, and short-term surface parking is provided along the internal drive aisles in front of the park and Buildings 1, 3, and 4
- Bicycle parking is primarily provided within a secure room underground and bike racks are proposed near each tower at the main entrances

- Hard surface connections are proposed between the building entrances, and a pedestrian connection is provided between the parking entrance at Building 1 and Walkley Road
- A bus stop will be located on Walkley Road south of Building 2
- Loading and garbage areas are provided between Building 1 and 2, north side of Building 3, and south side of Building 4
- Standard fire lanes that meet the 6-meter width and 12-meter center radii requirements are provided throughout the site, except for the northwest corner at Building 3 and the southwest corner at the park, which have smaller center radii. Although these two corners do not meet the standard fire lane requirements, emergency vehicles are still permitted to circulate on the site
- The garbage collection vehicle and move-in trucks were reviewed to confirm movements will be permitted on site
- The private drive aisles are proposed as 7.0 metre wide with parking bays provided near building entrances and along the open space frontage
- Raised crossings will provide additional traffic calming within the site, at both connection points to the new local road, and permit raised crossing locations for ease of travel within and through the site for active mode users
- A new 18.0 metre local road is proposed to the west of the site and will connect to Glenhaven Private. The new road will include the allocation of buffer space adjacent to the townhomes, a 7.0 metre road width and a 2.0-metre sidewalk along the east side of the road
- The new local road speed limit will be 30 km/h
- A modified cul-de-sac will be implemented to permit the turnaround movements of Municipal vehicles until such time as the road is extended to the north to facilitate the dead end of the new local road
- The new local road features a 90-degree turn to connect with the north leg of the Walkley Road and Glenhaven Private intersection

Parking

- The site provides a total of 979 vehicle parking spaces, including 20 visitor parking at grade, 95 visitor parking underground, and 864 residential parking underground
- The proposed vehicle parking exceeds the parking zoning by-law minimum requirements, and the visitor parking spaces meet the parking zoning by-law minimum requirements
- A total of 713 bicycle parking spaces are proposed to be shared between residential and commercial units, and these proposed spaces meet the zoning by-law minimum requirements
- Additional bike racks are provided on the surface near each tower main entrance
- It is recommended that at least three Type A and four Type B parking spaces be provided to meet the City of Ottawa Accessibility Design Standards (2015) requirements

Boundary Street Design

- Bank Street and Walkley Road do not meet the pedestrian targets due to traffic volumes and speed (> 50 km/h)
- To meet the theoretical pedestrian LOS targets, the operating speed would need to be less than 30 km/h or the curb lane vehicle volumes would need to be reduced to below 3000 AADT. However, the arterial roadways will not meet these targets
- Bank Street and Walkley Road do not meet the bicycle targets in the existing condition, although once the renewal is completed in this area, the bicycle targets will be met

Access Intersections Design

- A new local road will be constructed on the western boundary of the site, which will connect to Glenhaven Private and function as the primary access location for the development
- Two private drive aisles and two underground ramp entrances are proposed to access the new local road, the access will remain on Bank Street and the existing Walkley Road access will be removed
- No minimum throat length requirements are provided by the TAC Geometric Design Guidelines
- While the private approach by-law only permits two access locations along the local road frontage, the accesses meet the minimum separation required for accesses on the same site with the exception of the Building 1 underground ramp access and the southern drive aisle access due to the turning radii required for garbage trucks and fire access, as the accesses themselves are beyond the 9-metre offset distance requirement
- As the accesses are not being provided along Walkley Road, and a second access is not being proposed along Bank Street, the additional accesses along the local road are considered supportable and does not pose an undue risk to the operation of the local road in the future
- Sidewalks are proposed along the new local road, and the proposed accesses on will the new local road comply with the City of Ottawa standard drawing SC7.1
- The Bank Street access is situated 75 meters from the Bank Street and Walkley Road intersection, although it does not meet the TAC requirement, it meets the typical 70-meter clearance
- The Bank Street access will be reconstructed as part of the development and Bank Street Renewal project, removing the channelized configurations that is over 14 metre wide, and replacing it with an access configuration that will meet the private approach by-law and current City standards
- The proposed Bank Street will be an improved condition with a narrower access to slow down vehicle speeds, improve visibility for drivers and pedestrians, reduce crossing distance, and reduce the likelihood of accidents and enhance safety for pedestrians and cyclists
- Given that the new local road will function as the primary access and lower volumes are expected for accessing the Building 3 loading and garbage zone, the throat length for the Bank Street access is considered acceptable

TDM

- Supportive TDM measures to be included within the proposed development should include:
  - Display local area maps with walking and cycling routes, and transit route information and schedules at major entrances
  - Provide a multimodal travel option information package to new residents
  - Inclusion of a 1-month Presto card for first time apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of each building
  - Unbundle parking cost from purchase price, rental costs, or long-term parking for the commercial
  - Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)

Transit

- The proposed development is anticipated to generate an additional 395 AM and 305 PM peak hour two-way transit trips
- Peak hour increases in transit ridership resulting from the site equate to Two and half of a standard bus load northerly of the site, three-quarters of a standard bus load southerly of the site, one-quarter of a standard bus load easterly of the site, and one and half of a bus load westerly of the site

- Overall, residual capacity is observed at all nearby bus stops except for route #93, which may have average bus loads close to the standard bus load of 55 people per bus. Given the transit network at this location, this is a not a prohibitive constraint on the proposed mode share or forecasted ridership
- An additional standard bus may be required to accommodate the site-generated transit trips to and from the west
- It is anticipated that the existing service can accommodate site-generated transit trips to/from the north and south

Network Concept

- Being closer to the Walkley BRT station and future Walkley LRT station, the transit mode share is achievable
- The net site-generated trips have minimal impact on the road network
- The planned projects along Bank Street and Walkley Road are expected to increase transit and active mode shares and support the area

15 Conclusion

It is recommended that, from a transportation perspective, the proposed development applications proceed.

Prepared By:	Reviewed By:
	LICENSED PROFESSIONAL ENGINEER A. J. HARTE 100149314 October 4, 2024 PROVINCE OF ONTARIO
Yu-Chu Chen Transportation Engineering-Intern	Andrew Harte, P.Eng. Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

CGH TRANSPORTATION

6 Plaza Court
Ottawa, ON K2H 7W1

City of Ottawa 2023 Revisions to 2017 TIA Guidelines
Step 1 - Screening Form

Date:	3-Oct-24
Project Number:	2023-025
Project Reference:	1822 Bank

1.1 Description of Proposed Development	
Municipal Address	1820-1846 Bank Street
Description of Location	1.74-hectare parcel on the northwest quadrant of the intersection of Bank Street at Walkley Road
Land Use Classification	Arterial Mainstreet (AM8)
Development Size	Up to 1,426 residential units, approximately 750 m2 (8,073 ft2) of ground floor retail space, and an internal open space
Accesses	A new local road will connect to Glenhaven Private and function as the primary access location for the development. Two private roadways and two underground ramp entrances are proposed to access the new local road, the Bank Street access will remain
Phase of Development	Multiple
Buildout Year	2035
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Multi-Family (High-Rise)	
Development Size	1426	Units
Trip Generation Trigger	Yes	

1.3 Location Triggers		
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	No	
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?	Yes	Bank Street and Walkley Road Mainstreet DPAs
Location Trigger	Yes	

1.4. Safety Triggers		
Are posted speed limits on a boundary street 80 km/hr or greater?	No	
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	No	
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	Yes	Bank Street at Walkley Road signalized intersection
Is the proposed driveway within auxiliary lanes of an intersection?	Yes	
Does the proposed driveway make use of an existing median break that serves an existing site?	No	
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	Yes	High collisions at the intersection of Bank Street at Walkley Road
Does the development include a drive-thru facility?	No	
Safety Trigger	Yes	

Certification Form for TIA Study PM

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that they meet the four criteria listed below.

CERTIFICATION

- [x] I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines; (Update effective July 2023)
- [x] I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- [x] I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
- [x] I am either a licensed or registered[1] professional in good standing, whose field of expertise
  - [x] is either transportation engineering
  - [ ] or transportation planning.

[1] License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

City Of Ottawa
Planning, Real Estate and Economic Development
110 Laurier Avenue West, 4th fl.
Ottawa, ON
K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Dated at Ottawa (City) this 17 day of August, 20 23 .

Name : Andrew Harte

Professional title: Senior Transportation Engineer / Vice-President Ottawa

Signature of individual certifier that s/he/they meet the above criteria

Office Contact Information (Please Print)	
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City / Postal Code:	Ottawa, K2H 7W1
Telephone / Extension:	613-697-3797
Email Address:	andrew.harte@cghtransportation.com

Stamp

Revision Date: June 2023

Appendix B

Turning Movement Counts

Transportation Services - Traffic Services

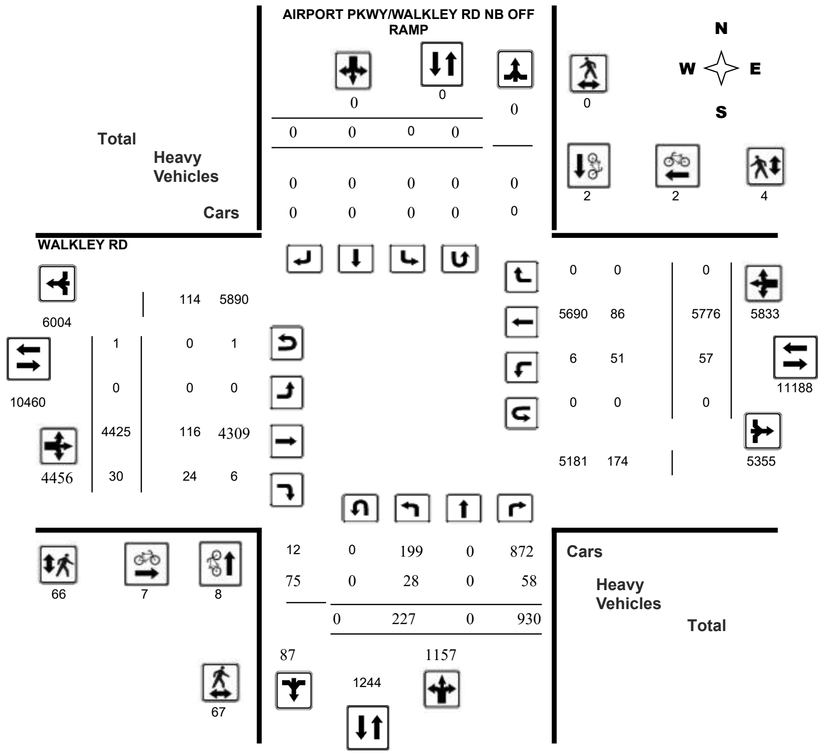
Turning Movement Count - Study Results

AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444

Start Time: 07:00 **Device:** Miovision

Full Study Diagram



Transportation Services - Traffic Services

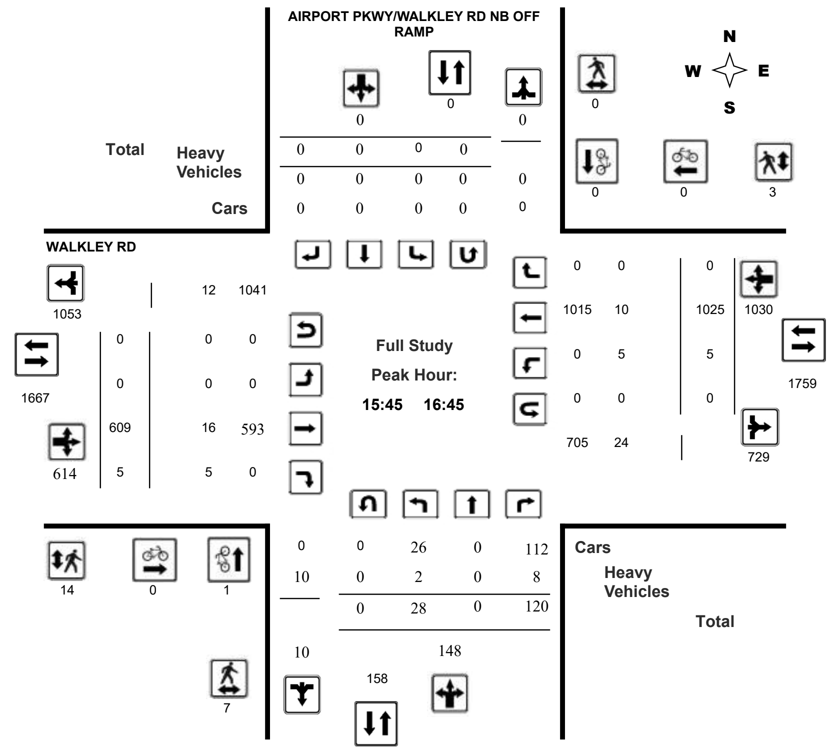
Turning Movement Count - Study Results

AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444

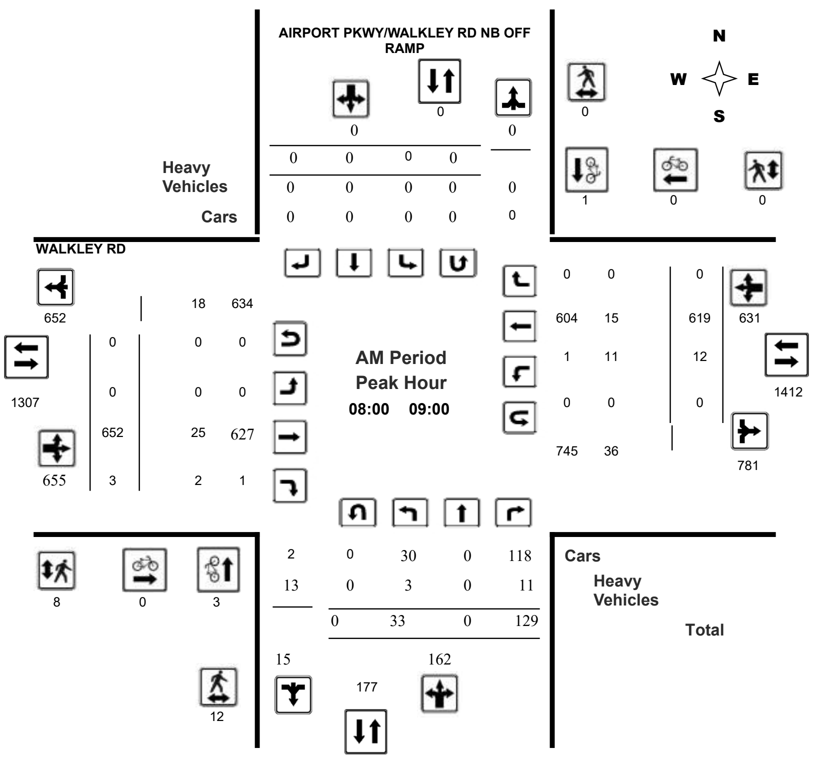
Start Time: 07:00 **Device:** Miovision

Full Study Peak Hour Diagram



Transportation Services - Traffic Services
Turning Movement Count - Peak Hour Diagram
AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

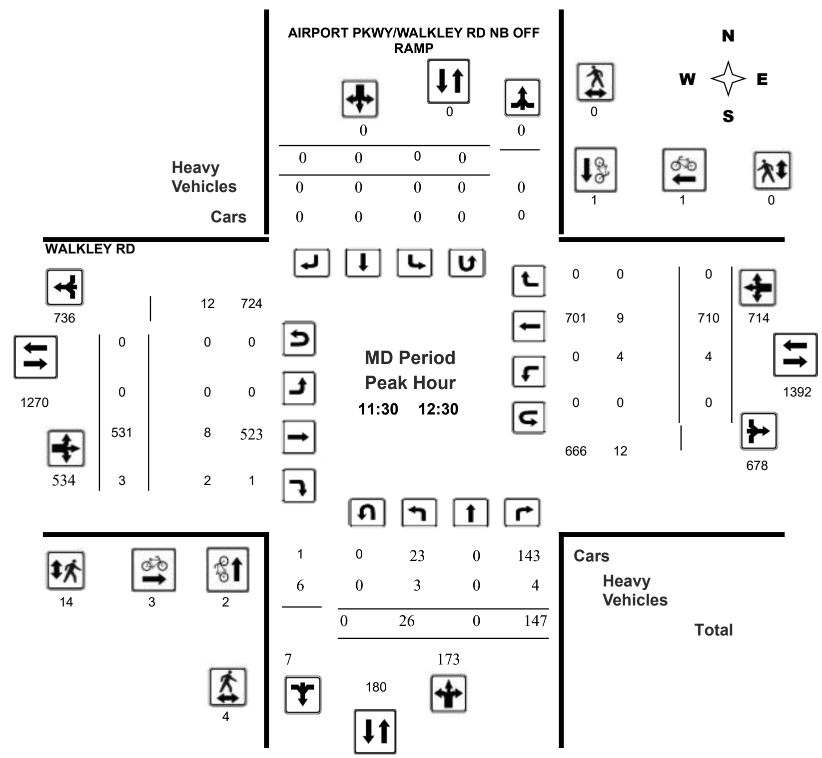
Survey Date: Tuesday, June 21, 2022 **WO No:** 40444
Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services
Turning Movement Count - Peak Hour Diagram
AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444
Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444
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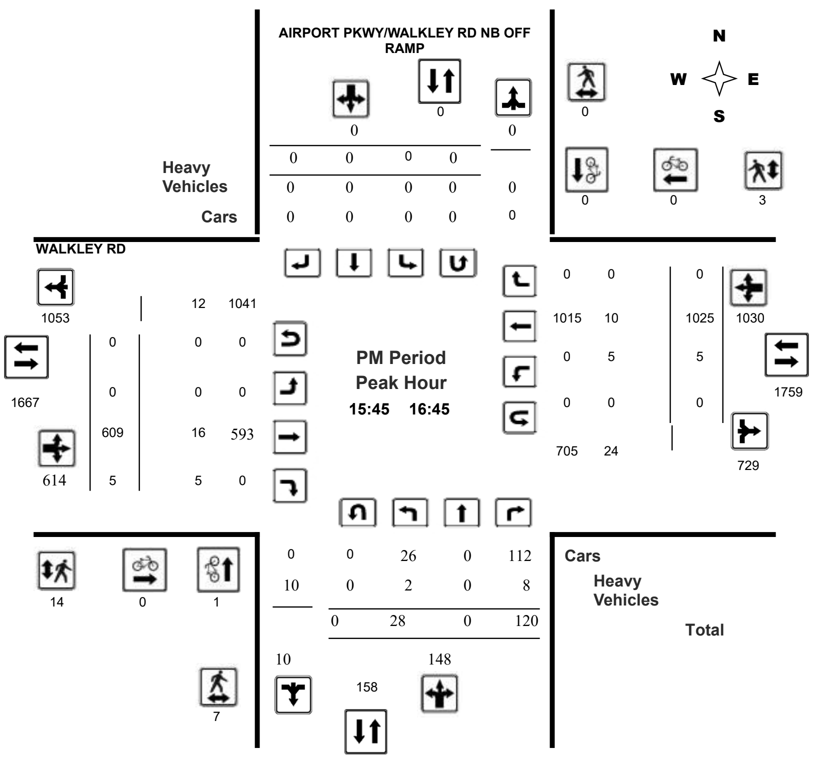


Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444
Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, June 21, 2022

Total Observed U-Turns
Northbound: 0 Southbound: 0
Eastbound: 1 Westbound: 0

AADT Factor
.90

	AIRPORT PKWY/WALKLEY RD NB OFF RAMP									WALKLEY RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	28	0	75	**103**	0	0	0	**0**	**103**	0	474	5	**479**	9	455	0	**464**	**943**	**1046**
08:00 09:00	33	0	129	**162**	0	0	0	**0**	**162**	0	652	3	**655**	12	619	0	**631**	**1286**	**1448**
09:00 10:00	23	0	113	**136**	0	0	0	**0**	**136**	0	503	4	**507**	4	549	0	**553**	**1060**	**1196**
11:30 12:30	26	0	147	**173**	0	0	0	**0**	**173**	0	531	3	**534**	4	710	0	**714**	**1248**	**1421**
12:30 13:30	32	0	117	**149**	0	0	0	**0**	**149**	0	524	4	**528**	7	660	0	**667**	**1195**	**1344**
15:00 16:00	31	0	133	**164**	0	0	0	**0**	**164**	0	580	2	**582**	10	943	0	**953**	**1535**	**1699**
16:00 17:00	28	0	109	**137**	0	0	0	**0**	**137**	0	594	6	**600**	6	996	0	**1002**	**1602**	**1739**
17:00 18:00	26	0	107	**133**	0	0	0	**0**	**133**	0	567	3	**570**	5	844	0	**849**	**1419**	**1552**
Sub Total	227	0	930	**1157**	0	0	0	**0**	**1157**	0	4425	30	**4455**	57	5776	0	**5833**	**10288**	**11445**
U Turns	0			**0**	0			**0**	**0**	**1**			**1**	0			**0**	**1**	**1**
Total	227	0	930	**1157**	0	0	0	**0**	**1157**	1	4425	30	**4456**	57	5776	0	**5833**	**10289**	**11446**
EQ 12Hr	316	0	1293	**1609**	0	0	0	**0**	**1609**	1	6151	42	**6194**	79	8029	0	**8108**	**14302**	**15911**
AVG 12Hr	284	0	1164	**1448**	0	0	0	**0**	**1448**	1	5536	38	**5575**	71	7226	0	**7297**	**12872**	**14320**
AVG 24Hr	372	0	1525	**1897**	0	0	0	**0**	**1897**	1	7252	50	**7303**	93	9466	0	**9559**	**16862**	**18759**

Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **.90**

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

Time Period		AIRPORT PKWY/WALKLEY RD NB OFF RAMP Northbound	Southbound	Street Total	WALKLEY RD Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	0	0	**0**	0	0	**0**	**0**
07:45	08:00	1	0	**1**	0	0	**0**	**1**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
08:30	08:45	3	1	**4**	0	0	**0**	**4**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	0	**0**	0	0	**0**	**0**
09:30	09:45	0	0	**0**	0	0	**0**	**0**
09:45	10:00	0	0	**0**	1	0	**1**	**1**
11:30	11:45	0	0	**0**	0	1	**1**	**1**
11:45	12:00	1	0	**1**	2	0	**2**	**3**
12:00	12:15	1	1	**2**	1	0	**1**	**3**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	1	0	**1**	**1**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	1	0	**1**	0	1	**1**	**2**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	1	0	**1**	0	0	**0**	**1**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	0	**0**	2	0	**2**	**2**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		8	2	**10**	7	2	**9**	**19**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

Time Period		AIRPORT PKWY/WALKLEY RD NB OFF RAMP NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	WALKLEY RD EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00	07:15	3	0	**3**	3	0	**3**	**6**
07:15	07:30	7	0	**7**	2	0	**2**	**9**
07:30	07:45	7	0	**7**	1	0	**1**	**8**
07:45	08:00	1	0	**1**	1	0	**1**	**2**
08:00	08:15	3	0	**3**	2	0	**2**	**5**
08:15	08:30	2	0	**2**	1	0	**1**	**3**
08:30	08:45	7	0	**7**	2	0	**2**	**9**
08:45	09:00	0	0	**0**	3	0	**3**	**3**
09:00	09:15	3	0	**3**	5	0	**5**	**8**
09:15	09:30	0	0	**0**	2	0	**2**	**2**
09:30	09:45	2	0	**2**	1	0	**1**	**3**
09:45	10:00	1	0	**1**	2	0	**2**	**3**
11:30	11:45	0	0	**0**	5	0	**5**	**5**
11:45	12:00	2	0	**2**	0	0	**0**	**2**
12:00	12:15	1	0	**1**	4	0	**4**	**5**
12:15	12:30	1	0	**1**	5	0	**5**	**6**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	1	0	**1**	1	0	**1**	**2**
13:00	13:15	0	0	**0**	2	0	**2**	**2**
13:15	13:30	1	0	**1**	1	0	**1**	**2**
15:00	15:15	0	0	**0**	2	0	**2**	**2**
15:15	15:30	0	0	**0**	2	0	**2**	**2**
15:30	15:45	3	0	**3**	0	1	**1**	**4**
15:45	16:00	1	0	**1**	3	0	**3**	**4**
16:00	16:15	1	0	**1**	3	0	**3**	**4**
16:15	16:30	3	0	**3**	5	3	**8**	**11**
16:30	16:45	2	0	**2**	3	0	**3**	**5**
16:45	17:00	1	0	**1**	0	0	**0**	**1**
17:00	17:15	7	0	**7**	0	0	**0**	**7**
17:15	17:30	2	0	**2**	2	0	**2**	**4**
17:30	17:45	3	0	**3**	1	0	**1**	**4**
17:45	18:00	2	0	**2**	2	0	**2**	**4**
Total		67	0	**67**	66	4	**70**	**137**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

		AIRPORT PKWY/WALKLEY RD NB OFF RAMP									WALKLEY RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	0	0		0	0	0		**1**	0	0	1		2	0	0		**3**	**4**
07:15	07:30	1	0	1		0	0	0		**2**	0	2	0		2	2	0		**6**	**8**
07:30	07:45	4	0	1		0	0	0		**5**	0	2	1		2	4	0		**9**	**14**
07:45	08:00	1	0	8		0	0	0		**9**	0	8	2		1	2	0		**13**	**22**
08:00	08:15	2	0	3		0	0	0		**5**	0	7	0		7	3	0		**17**	**22**
08:15	08:30	0	0	1		0	0	0		**1**	0	6	1		2	4	0		**13**	**14**
08:30	08:45	1	0	5		0	0	0		**6**	0	9	0		2	5	0		**16**	**22**
08:45	09:00	0	0	2		0	0	0		**2**	0	3	1		0	3	0		**7**	**9**
09:00	09:15	2	0	2		0	0	0		**4**	0	4	0		1	2	0		**7**	**11**
09:15	09:30	0	0	1		0	0	0		**1**	0	5	1		1	6	0		**13**	**14**
09:30	09:45	1	0	2		0	0	0		**3**	0	4	0		1	2	0		**7**	**10**
09:45	10:00	0	0	3		0	0	0		**3**	0	4	2		1	5	0		**12**	**15**
11:30	11:45	1	0	1		0	0	0		**2**	0	3	1		1	1	0		**6**	**8**
11:45	12:00	1	0	1		0	0	0		**2**	0	2	0		2	1	0		**5**	**7**
12:00	12:15	1	0	2		0	0	0		**3**	0	1	0		0	3	0		**4**	**7**
12:15	12:30	0	0	0		0	0	0		**0**	0	2	1		1	4	0		**8**	**8**
12:30	12:45	2	0	1		0	0	0		**3**	0	1	0		1	1	0		**3**	**6**
12:45	13:00	1	0	2		0	0	0		**3**	0	4	1		1	3	0		**9**	**12**
13:00	13:15	1	0	1		0	0	0		**2**	0	4	0		1	5	0		**10**	**12**
13:15	13:30	1	0	1		0	0	0		**2**	0	6	1		1	5	0		**13**	**15**
15:00	15:15	1	0	1		0	0	0		**2**	0	2	0		3	3	0		**8**	**10**
15:15	15:30	1	0	2		0	0	0		**3**	0	6	1		5	3	0		**15**	**18**
15:30	15:45	1	0	2		0	0	0		**3**	0	5	0		1	5	0		**11**	**14**
15:45	16:00	0	0	3		0	0	0		**3**	0	5	1		1	3	0		**10**	**13**
16:00	16:15	2	0	2		0	0	0		**4**	0	3	2		1	5	0		**11**	**15**
16:15	16:30	0	0	1		0	0	0		**1**	0	6	1		1	2	0		**10**	**11**
16:30	16:45	0	0	2		0	0	0		**2**	0	2	1		2	0	0		**5**	**7**
16:45	17:00	0	0	1		0	0	0		**1**	0	3	2		2	0	0		**7**	**8**
17:00	17:15	1	0	1		0	0	0		**2**	0	3	0		1	1	0		**5**	**7**
17:15	17:30	0	0	2		0	0	0		**2**	0	2	1		1	2	0		**6**	**8**
17:30	17:45	1	0	2		0	0	0		**3**	0	2	0		2	0	0		**4**	**7**
17:45	18:00	0	0	1		0	0	0		**1**	0	0	2		1	1	0		**4**	**5**
Total:	None	28	0	58	**0**	0	0	0	**0**	**86**	0	116	24	**0**	51	86	0	**0**	**277**	**363**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD

Survey Date: Tuesday, June 21, 2022 **WO No:** 40444

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

		AIRPORT PKWY/WALKLEY RD NB OFF RAMP		WALKLEY RD		
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	**0**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	0	0	0	0	**0**
08:45	09:00	0	0	0	0	**0**
09:00	09:15	0	0	1	0	**1**
09:15	09:30	0	0	0	0	**0**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	0	0	0	0	**0**
11:30	11:45	0	0	0	0	**0**
11:45	12:00	0	0	0	0	**0**
12:00	12:15	0	0	0	0	**0**
12:15	12:30	0	0	0	0	**0**
12:30	12:45	0	0	0	0	**0**
12:45	13:00	0	0	0	0	**0**
13:00	13:15	0	0	0	0	**0**
13:15	13:30	0	0	0	0	**0**
15:00	15:15	0	0	0	0	**0**
15:15	15:30	0	0	0	0	**0**
15:30	15:45	0	0	0	0	**0**
15:45	16:00	0	0	0	0	**0**
16:00	16:15	0	0	0	0	**0**
16:15	16:30	0	0	0	0	**0**
16:30	16:45	0	0	0	0	**0**
16:45	17:00	0	0	0	0	**0**
17:00	17:15	0	0	0	0	**0**
17:15	17:30	0	0	0	0	**0**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	0	0	0	0	**0**
Total		0	0	1	0	**1**

Turning Movement Count
Summary Report Including Peak Hours, AADT and Expansion Factors
All Vehicles Except Bicycles

ACCURATE TRUSTED TRAFFIC DATA

Anand Private/Glenhaven Private & Walkley Road — Ottawa, ON

Survey Date: Wednesday, November 15, 2023 **Start Time:** 0700 **AADT Factor:** 0.9
Weather AM: Mostly Cloudy +2º C **Survey Duration:** 8 Hrs. **Survey Hours:** 0700-1000, 1130-1330 & 1500-1800
Weather PM: Mostly Cloudy +8º C **Surveyor(s):** T. Carmody

	Walkley Rd. Eastbound					Walkley Rd. Westbound						Anand Pvt. Northbound					Glenhaven Pvt. Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	6	639	19	0	664	10	558	0	0	568	1232	30	0	58	0	88	32	0	9	0	41	129	1361
0800-0900	24	861	28	2	915	41	699	7	2	749	1664	42	0	61	0	103	28	3	25	0	56	159	1823
0900-1000	18	678	34	1	731	38	581	9	0	628	1359	22	3	50	0	75	39	3	9	0	51	126	1485
1130-1230	25	622	34	1	682	70	718	14	2	804	1486	25	0	65	0	90	76	6	36	0	118	208	1694
1230-1330	30	609	36	0	675	56	747	17	3	823	1498	30	1	59	0	90	92	7	33	0	132	222	1720
1500-1600	20	740	27	0	787	91	1074	18	11	1194	1981	48	5	69	0	122	80	3	32	0	115	237	2218
1600-1700	22	786	46	0	854	78	1200	21	7	1306	2160	53	3	62	0	118	84	4	36	0	124	242	2402
1700-1800	28	720	58	0	806	109	935	21	2	1067	1873	54	7	75	0	136	56	6	41	0	103	239	2112
Totals	173	5655	282	4	6114	493	6512	107	27	7139	13253	304	19	499	0	822	487	32	221	0	740	1562	14815

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard weekday 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

Equ. 12 Hr	240	7860	392	6	8498	685	9052	149	38	9923	18422	423	26	694	0	1143	677	44	307	0	1029	2171	20593
AADT 12-hr	216	7074	353	5	7649	617	8147	134	34	8931	16580	380	24	624	0	1028	609	40	276	0	926	1954	18534
AADT 24 Hr	284	9267	462	7	10020	808	10672	175	44	11699	21719	498	31	818	0	1347	798	52	362	0	1213	2560	24279

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡ 0.94												Highest Hourly Vehicle Volume Between 0700h & 1000h											
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0800-0900	24	861	28	2	915	41	699	7	2	749	1664	42	0	61	0	103	28	3	25	0	56	159	1823
OFF Peak Hour Factor ➡ 0.97												Highest Hourly Vehicle Volume Between 1130h & 1330h											
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1200-1300	35	637	41	1	714	59	782	19	2	862	1576	31	1	64	0	96	81	6	38	0	125	221	1797
PM Peak Hour Factor ➡ 0.97												Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1600-1700	22	786	46	0	854	78	1200	21	7	1306	2160	53	3	62	0	118	84	4	36	0	124	242	2402

Comments:

OC Transpo & Para Transpo buses, private buses and school buses comprise 43.87% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17.

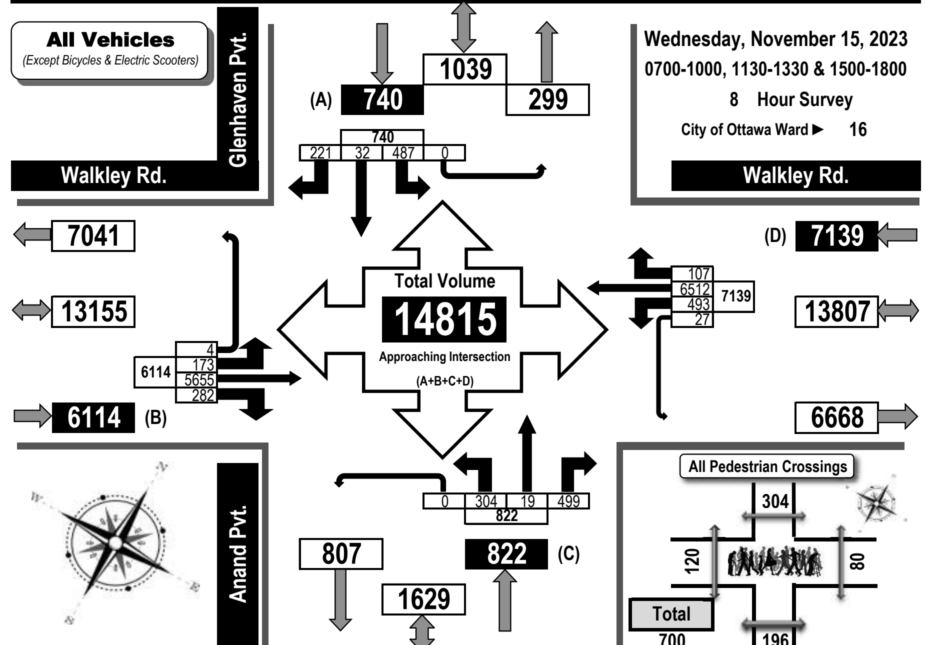
Notes:

1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

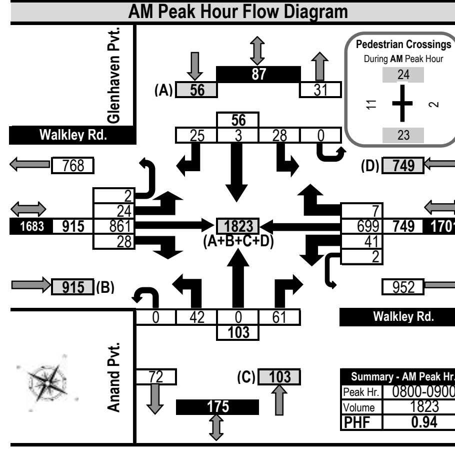
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

ACCURATE TRUSTED TRAFFIC DATA

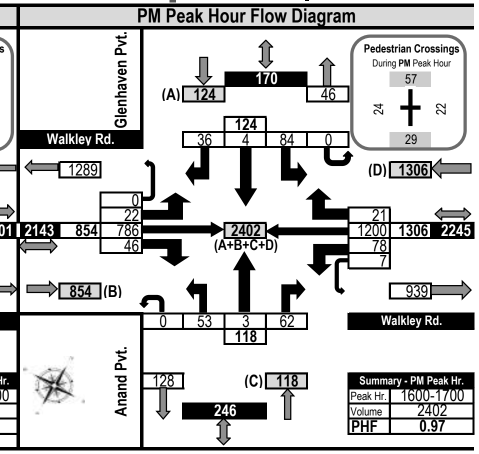
Anand Private/Glenhaven Private & Walkley Road — Ottawa, ON



AM Peak Hour Flow Diagram



PM Peak Hour Flow Diagram

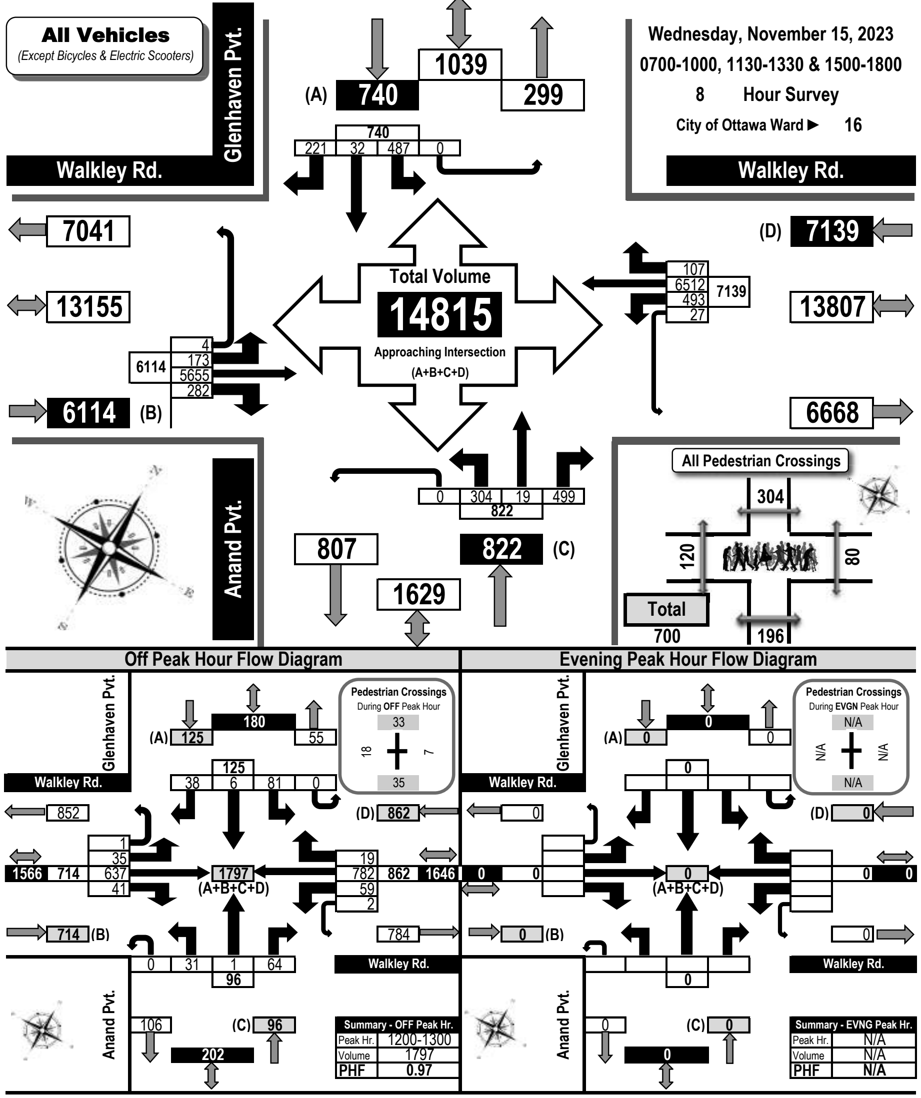


Turning Movement Count

Summary, OFF and EVENING Peak Hour Flow Diagrams

All Vehicles Except Bicycles

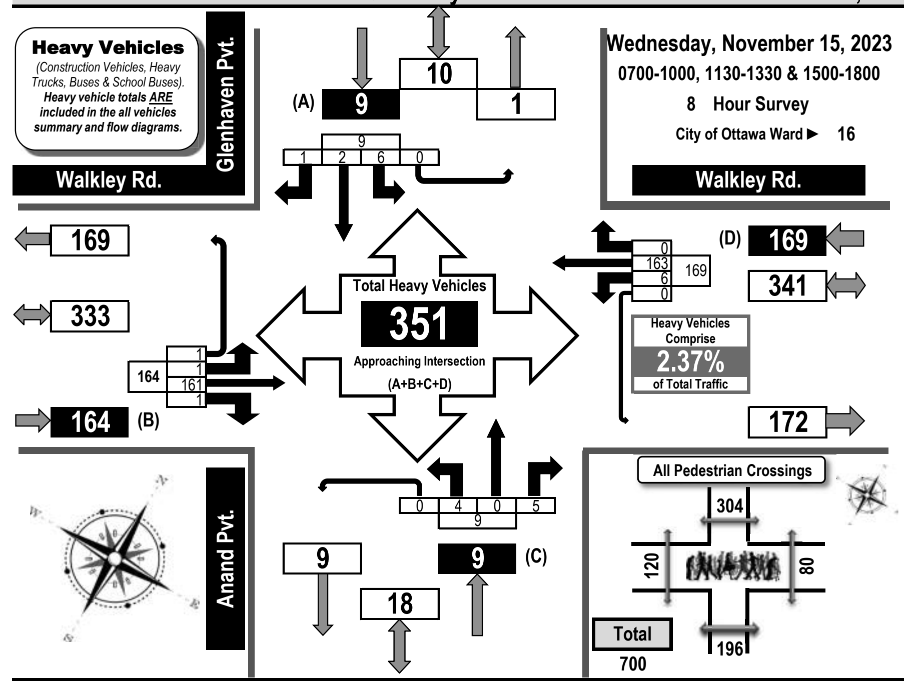
Anand Private/Glenhaven Private & Walkley Road — Ottawa, ON



Turning Movement Count

Heavy Vehicle Summary (FHWA Class 4-13) Flow Diagram

Anand Private/Glenhaven Private & Walkley Road — Ottawa, ON



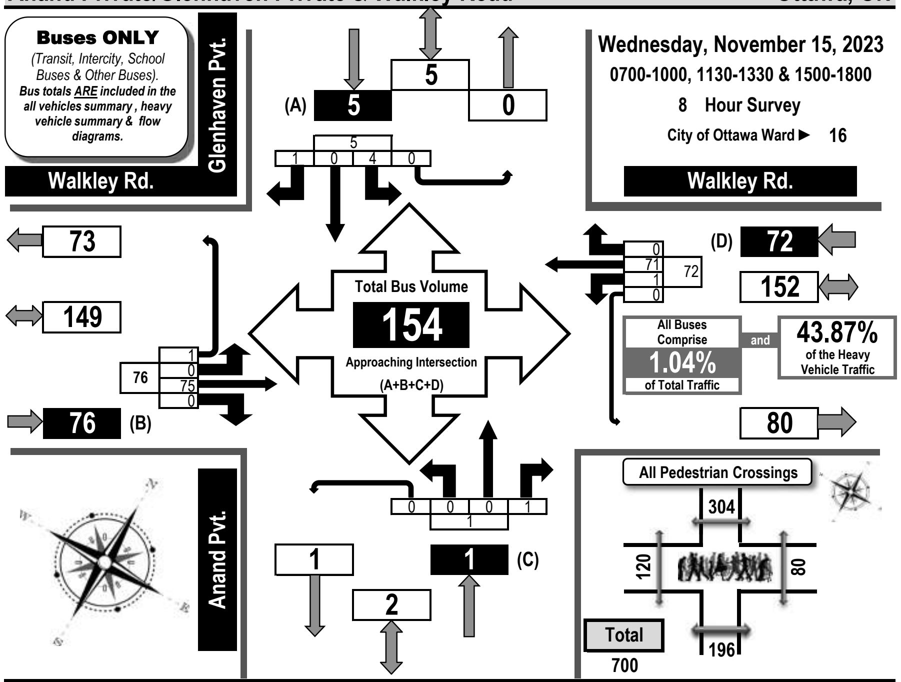
	Walkley Rd. Eastbound					Walkley Rd. Westbound					Anand Pvt. Northbound					Glenhaven Pvt. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	22	0	0	22	0	25	0	0	25	0	0	0	0	0	2	0	0	0	2	49
0800-0900	0	23	0	0	23	2	24	0	0	26	0	0	2	0	2	0	0	1	0	1	52
0900-1000	0	19	0	0	19	2	20	0	0	22	2	0	1	0	3	1	0	0	0	1	45
1130-1230	0	24	0	1	25	2	21	0	0	23	1	0	0	0	1	1	0	0	0	1	50
1230-1330	1	18	0	0	19	0	24	0	0	24	0	0	0	0	0	0	2	0	0	2	45
1500-1600	0	19	1	0	20	0	20	0	0	20	0	0	2	0	2	0	0	0	0	0	42
1600-1700	0	25	0	0	25	0	17	0	0	17	0	0	0	0	0	2	0	0	0	2	44
1700-1800	0	11	0	0	11	0	12	0	0	12	1	0	0	0	1	0	0	0	0	0	24
Totals	1	161	1	1	164	6	163	0	0	169	4	0	5	0	9	6	2	1	0	9	351

Comments:

OC Transpo & Para Transpo buses, private buses and school buses comprise 43.87% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17.

Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram

Anand Private/Glenhaven Private & Walkley Road Ottawa, ON



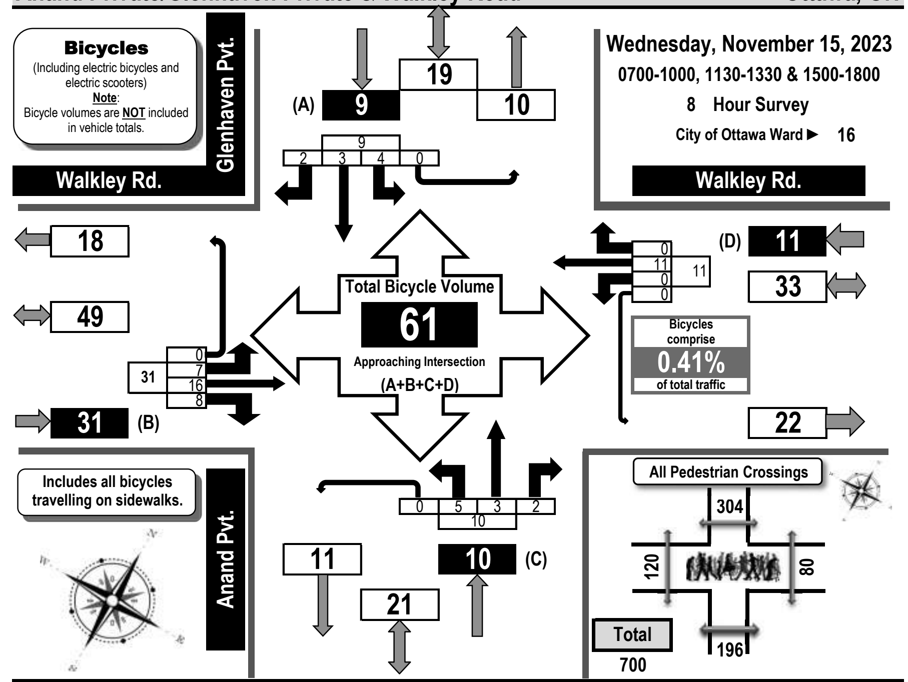
Time Period	Walkley Rd. Eastbound LT	ST	RT	UT	EB Tot	Walkley Rd. Westbound LT	ST	RT	UT	WB Tot	Anand Pvt. Northbound LT	ST	RT	UT	NB Tot	Glenhaven Pvt. Southbound LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	9	0	0	9	0	12	0	0	12	0	0	0	0	0	2	0	0	0	2	23
0800-0900	0	20	0	0	20	1	13	0	0	14	0	0	1	0	1	0	0	1	0	1	36
0900-1000	0	11	0	0	11	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	22
1130-1230	0	6	0	1	7	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	13
1230-1330	0	4	0	0	4	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
1500-1600	0	7	0	0	7	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	18
1600-1700	0	13	0	0	13	0	9	0	0	9	0	0	0	0	0	2	0	0	0	2	24
1700-1800	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
Totals	0	75	0	1	76	1	71	0	0	72	0	0	1	0	1	4	0	1	0	5	154

Comments:

OC Transpo & Para Transpo buses, private buses and school buses comprise 43.87% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17.

Turning Movement Count
Bicycle Summary
Flow Diagram

Anand Private/Glenhaven Private & Walkley Road Ottawa, ON



Time Period	Walkley Rd. Eastbound LT	ST	RT	UT	EB Tot	Walkley Rd. Westbound LT	ST	RT	UT	WB Tot	Anand Pvt. Northbound LT	ST	RT	UT	NB Tot	Glenhaven Pvt. Southbound LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	4	2	0	0	6	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	9
0800-0900	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
0900-1000	0	3	1	0	4	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	5
1130-1230	1	1	4	0	6	0	0	0	0	0	1	0	0	0	1	2	0	0	0	2	9
1230-1330	0	2	1	0	3	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	6
1500-1600	0	1	1	0	2	0	4	0	0	4	2	1	0	0	3	0	0	0	0	0	9
1600-1700	1	2	0	0	3	0	2	0	0	2	0	0	1	0	1	0	0	2	0	2	8
1700-1800	0	1	1	0	2	0	1	0	0	1	1	0	1	0	2	2	3	0	0	5	10
Totals	7	16	8	0	31	0	11	0	0	11	5	3	2	0	10	4	3	2	0	9	61

Comments:

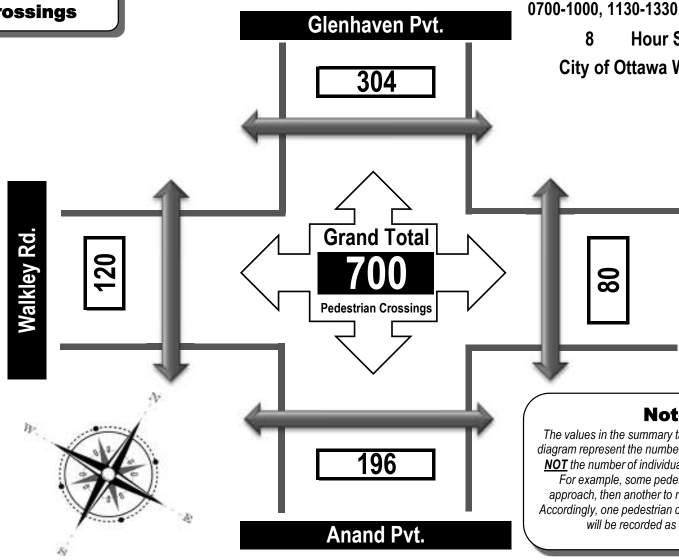
OC Transpo & Para Transpo buses, private buses and school buses comprise 43.87% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17.

Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Anand Private/Glenhaven Private & Walkley Road — **Ottawa, ON**

Pedestrian Crossings

Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 16



Note
The values in the summary table below and the flow diagram represent the number of pedestrian crossings NOT the number of individual pedestrians crossing. For example, some pedestrians will cross one approach, then another to reach their destination. Accordingly, one pedestrian crossing two approaches will be recorded as two crossings.

Time Period	West Side Crossing Walkley Rd.	East Side Crossing Walkley Rd.	Street Total	South Side Crossing Anand Pvt.	North Side Crossing Glenhaven Pvt.	Street Total	Grand Total
0700-0800	8	3	11	21	25	46	57
0800-0900	11	2	13	23	24	47	60
0900-1000	5	6	11	18	26	44	55
1130-1230	14	10	24	22	38	60	84
1230-1330	10	5	15	26	32	58	73
1500-1600	19	22	41	24	55	79	120
1600-1700	24	22	46	29	57	86	132
1700-1800	29	10	39	33	47	80	119
Totals	**120**	**80**	**200**	**196**	**304**	**500**	**700**

Comments:
OC Transpo & Para Transpo buses, private buses and school buses comprise 43.87% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17.

Turning Movement Count
Summary Report Including Peak Hours, AADT and Expansion Factors
All Vehicles Except Bicycles

Bank Street & Walkley Road — **Ottawa, ON**

Survey Date: Wednesday, November 15, 2023 **Start Time:** 0700 **AADT Factor:** 0.9
Weather AM: Mostly Cloudy +2° C **Survey Duration:** 8 Hrs. **Survey Hours:** 0700-1000, 1130-1330 & 1500-1800
Weather PM: Mostly Cloudy +8° C **Surveyor(s):** T. Carmody

	Walkley Rd. Eastbound					Walkley Rd. Westbound						Bank St. Northbound					Bank St. Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	328	298	103	0	729	87	334	144	0	565	1294	89	734	105	0	928	81	345	165	7	598	1526	2820
0800-0900	389	407	156	0	952	101	362	265	1	729	1681	152	1106	181	2	1441	126	501	262	17	906	2347	4028
0900-1000	294	356	116	1	767	132	301	187	0	620	1387	108	693	133	1	935	146	582	247	27	1002	1937	3324
1130-1230	263	332	170	0	765	169	352	218	1	740	1505	147	741	192	4	1084	151	739	357	47	1294	2378	3883
1230-1330	282	307	174	0	763	161	371	204	3	739	1502	157	735	182	5	1079	177	771	351	47	1346	2425	3927
1500-1600	301	381	218	0	900	210	545	243	1	999	1899	200	769	198	4	1171	208	963	504	42	1717	2888	4787
1600-1700	324	399	216	0	939	243	595	218	4	1060	1999	178	766	195	3	1142	224	987	574	39	1824	2966	4965
1700-1800	277	370	205	1	853	189	469	227	1	886	1739	178	704	195	0	1077	231	1003	469	36	1739	2816	4555
Totals	2458	2850	1358	2	6668	1292	3329	1706	11	6338	13006	1209	6248	1381	19	8857	1344	5891	2929	262	10426	19283	32289

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard weekday 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
Equ. 12 Hr	3417	3962	1888	3	9269	1796	4627	2371	15	8810	18078	1681	8685	1920	26	12311	1868	8188	4071	364	14492	26803	44882
AADT 12-hr	3075	3565	1699	3	8342	1616	4165	2134	14	7929	16271	1512	7816	1728	24	11080	1681	7370	3664	328	13043	24123	40394
AADT 24 Hr	4028	4671	2226	3	10928	2117	5456	2796	18	10387	21314	1981	10239	2263	31	14515	2203	9654	4800	429	17086	31601	52916

AADT and expansion factors provided by the City of Ottawa

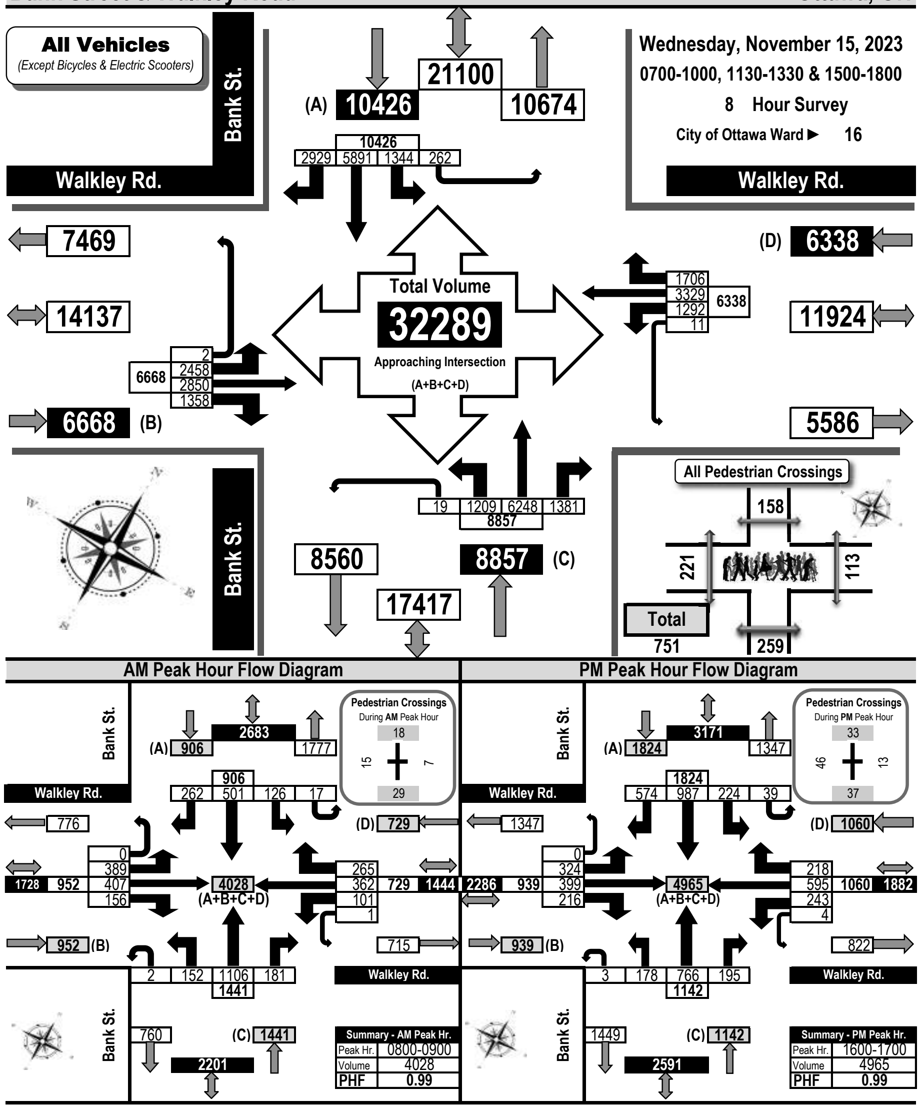
AM Peak Hour Factor ➡ 0.99												Highest Hourly Vehicle Volume Between 0700h & 1000h											
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0800-0900	389	407	156	0	952	101	362	265	1	729	1681	152	1106	181	2	1441	126	501	262	17	906	2347	4028
OFF Peak Hour Factor ➡ 0.96												Highest Hourly Vehicle Volume Between 1130h & 1330h											
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1200-1300	286	328	170	0	784	163	383	207	0	753	1537	164	776	181	5	1126	165	726	379	50	1320	2446	3983
PM Peak Hour Factor ➡ 0.99												Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1600-1700	324	399	216	0	939	243	595	218	4	1060	1999	178	766	195	3	1142	224	987	574	39	1824	2966	4965

Comments:
OC Transpo & Para Transpo buses, private buses and school buses comprise 32.46% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16, 17 & 18.

Notes:
1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

Turning Movement Count
Summary, AM and PM Peak Hour
Flow Diagrams
All Vehicles Except Bicycles

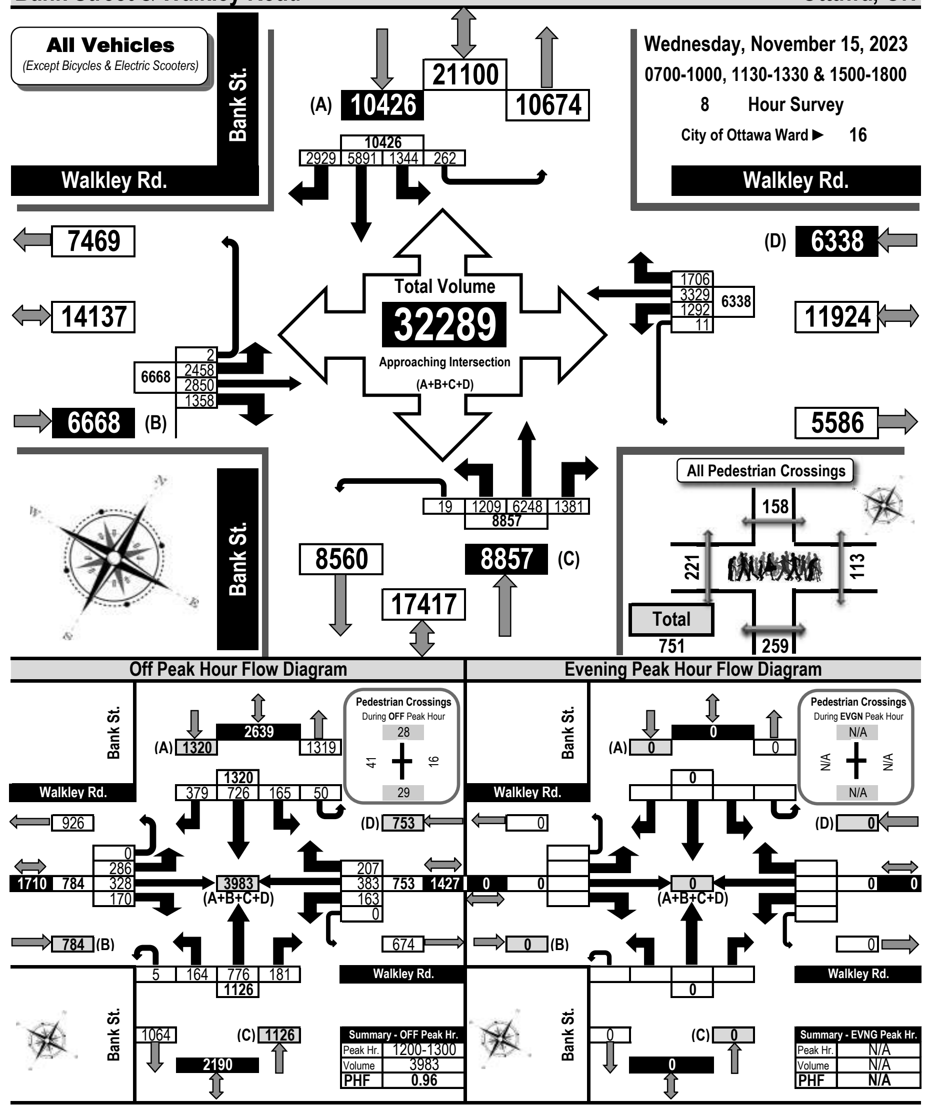
Bank Street & Walkley Road Ottawa, ON



Printed on: 11/26/2023 Prepared by: thetrafficspecialist@gmail.com Flow Diagrams: AM PM Peak

Turning Movement Count
Summary, OFF and EVENING Peak Hour
Flow Diagrams
All Vehicles Except Bicycles

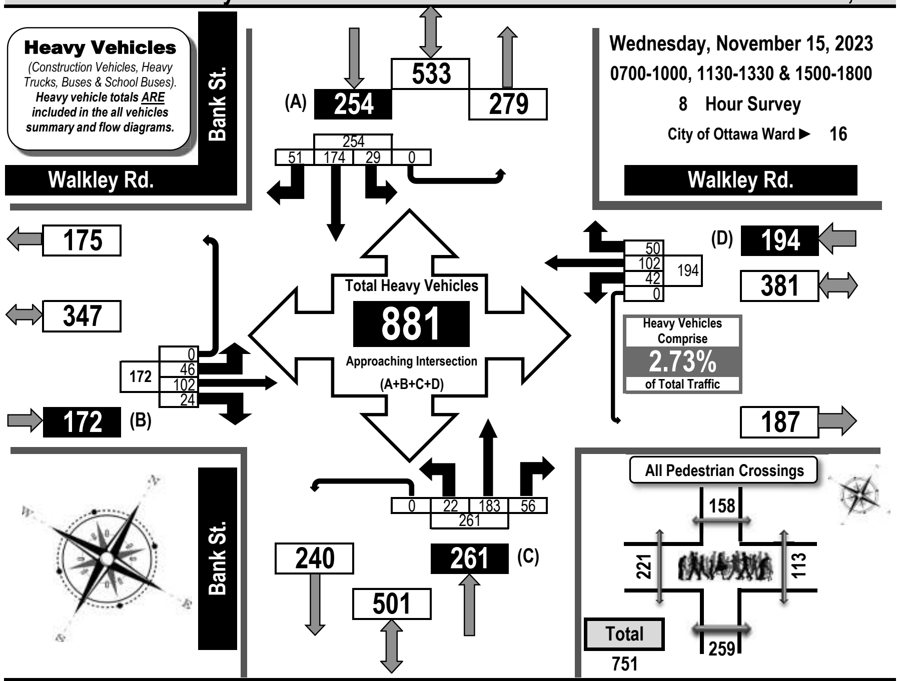
Bank Street & Walkley Road Ottawa, ON



Printed on: 11/26/2023 Prepared by: thetrafficspecialist@gmail.com Flow Diagrams: OFF Peak

Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram

Bank Street & Walkley Road — **Ottawa, ON**

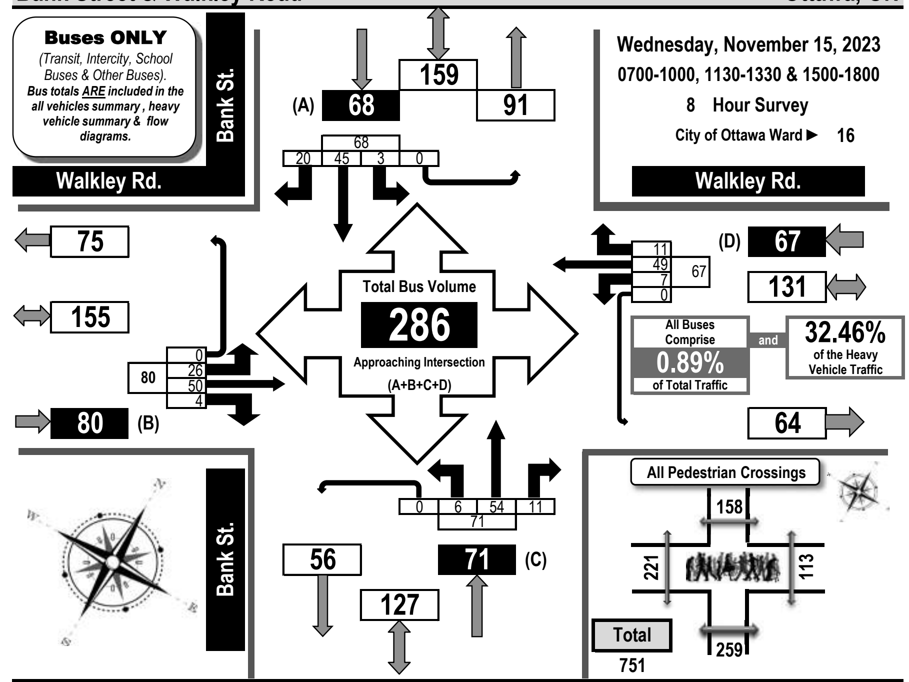


Time Period	Walkley Rd. Eastbound LT	ST	RT	UT	EB Tot	Walkley Rd. Westbound LT	ST	RT	UT	WB Tot	Bank St. Northbound LT	ST	RT	UT	NB Tot	Bank St. Southbound LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	9	13	2	0	24	3	19	3	0	25	1	26	8	0	35	5	16	6	0	27	111
0800-0900	16	8	1	0	25	4	17	10	0	31	4	29	12	0	45	2	21	7	0	30	131
0900-1000	5	14	2	0	21	15	14	7	0	36	6	35	5	0	46	8	25	3	0	36	139
1130-1230	3	18	4	0	25	6	13	8	0	27	2	26	14	0	42	2	28	8	0	38	132
1230-1330	6	9	3	0	18	5	14	5	0	24	3	20	7	0	30	3	24	8	0	35	107
1500-1600	3	13	5	0	21	4	12	11	0	27	0	25	5	0	30	5	29	8	0	42	120
1600-1700	3	20	4	0	27	4	9	4	0	17	3	15	3	0	21	0	14	6	0	20	85
1700-1800	1	7	3	0	11	1	4	2	0	7	3	7	2	0	12	4	17	5	0	26	56
Totals	46	102	24	0	172	42	102	50	0	194	22	183	56	0	261	29	174	51	0	254	881

Comments:
OC Transpo & Para Transpo buses, private buses and school buses comprise 32.46% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16, 17 & 18.

Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram

Bank Street & Walkley Road — **Ottawa, ON**



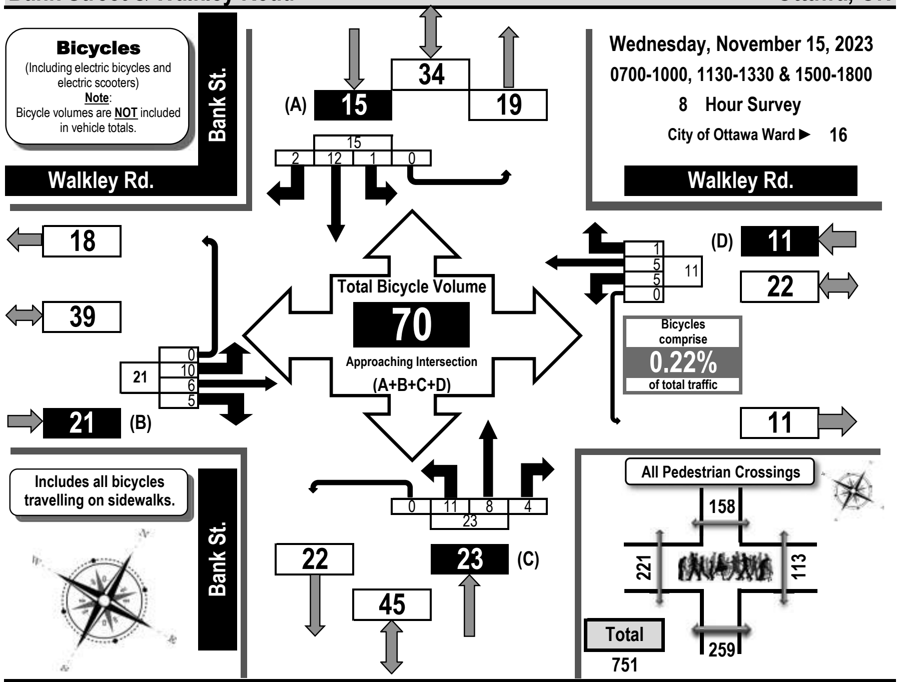
Time Period	Walkley Rd. Eastbound LT	ST	RT	UT	EB Tot	Walkley Rd. Westbound LT	ST	RT	UT	WB Tot	Bank St. Northbound LT	ST	RT	UT	NB Tot	Bank St. Southbound LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	4	7	0	0	11	1	10	0	0	11	1	5	0	0	6	2	4	2	0	8	36
0800-0900	16	4	1	0	21	1	8	6	0	15	2	12	1	0	15	0	8	5	0	13	64
0900-1000	2	8	1	0	11	3	9	1	0	13	1	9	3	0	13	0	6	1	0	7	44
1130-1230	1	5	0	0	6	0	5	1	0	6	0	4	0	0	4	0	4	1	0	5	21
1230-1330	0	4	0	0	4	1	3	0	0	4	0	3	3	0	6	0	9	2	0	11	25
1500-1600	1	5	1	0	7	0	5	3	0	8	0	13	2	0	15	1	7	6	0	14	44
1600-1700	2	12	1	0	15	1	6	0	0	7	1	6	2	0	9	0	4	3	0	7	38
1700-1800	0	5	0	0	5	0	3	0	0	3	1	2	0	0	3	0	3	0	0	3	14
Totals	26	50	4	0	80	7	49	11	0	67	6	54	11	0	71	3	45	20	0	68	286

Comments:
OC Transpo & Para Transpo buses, private buses and school buses comprise 32.46% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16, 17 & 18.

Turning Movement Count
Bicycle Summary
Flow Diagram

Bank Street & Walkley Road Ottawa, ON

Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 16



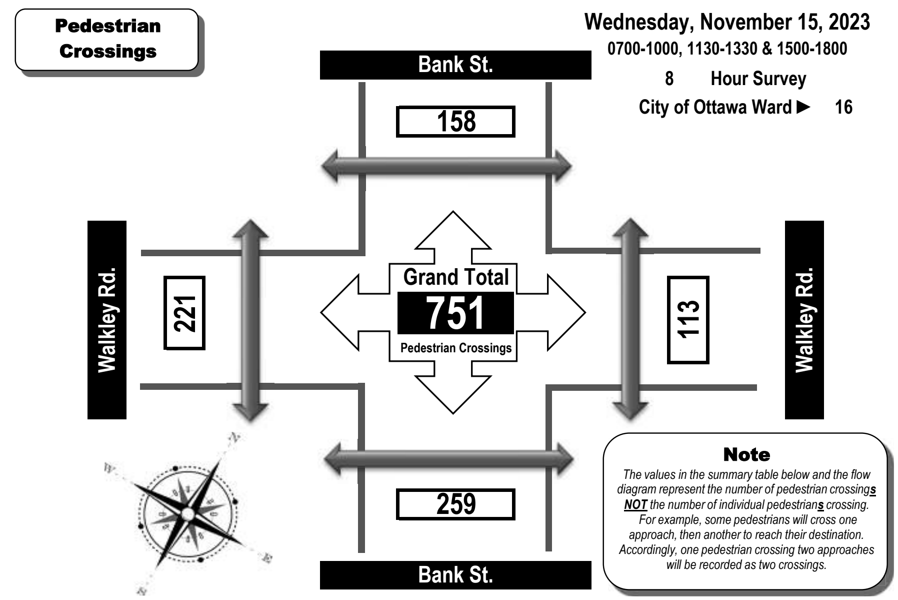
	Walkley Rd. Eastbound					Walkley Rd. Westbound					Bank St. Northbound					Bank St. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1	1	0	0	0	1	5
0800-0900	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
0900-1000	2	0	1	0	3	0	0	1	0	1	0	1	0	0	1	0	1	0	0	1	6
1130-1230	1	1	1	0	3	2	0	0	0	2	0	0	0	0	0	0	3	1	0	4	9
1230-1330	3	0	0	0	3	0	0	0	0	0	3	0	2	0	5	0	1	0	0	1	9
1500-1600	1	1	0	0	2	0	2	0	0	2	1	3	1	0	5	0	3	0	0	3	12
1600-1700	1	1	2	0	4	3	0	0	0	3	5	0	0	0	5	0	4	1	0	5	17
1700-1800	1	0	1	0	2	0	2	0	0	2	1	2	1	0	4	0	0	0	0	0	8
Totals	10	6	5	0	21	5	5	1	0	11	11	8	4	0	23	1	12	2	0	15	70

Comments:
OC Transpo & Para Transpo buses, private buses and school buses comprise 32.46% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16, 17 & 18.

Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Bank Street & Walkley Road Ottawa, ON

Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 16



Note
The values in the summary table below and the flow diagram represent the number of pedestrian crossings NOT the number of individual pedestrians crossing. For example, some pedestrians will cross one approach, then another to reach their destination. Accordingly, one pedestrian crossing two approaches will be recorded as two crossings.

Time Period	West Side Crossing Walkley Rd.	East Side Crossing Walkley Rd.	Street Total	South Side Crossing Bank St.	North Side Crossing Bank St.	Street Total	Grand Total
0700-0800	12	4	16	14	10	24	40
0800-0900	15	7	22	29	18	47	69
0900-1000	12	7	19	25	6	31	50
1130-1230	32	32	64	43	27	70	134
1230-1330	36	18	54	33	17	50	104
1500-1600	40	21	61	42	18	60	121
1600-1700	46	13	59	37	33	70	129
1700-1800	28	11	39	36	29	65	104
Totals	221	113	334	259	158	417	751

Comments:
OC Transpo & Para Transpo buses, private buses and school buses comprise 32.46% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16, 17 & 18.

Diagrams, Maps and Photographs

Banff Avenue & Walkley Road

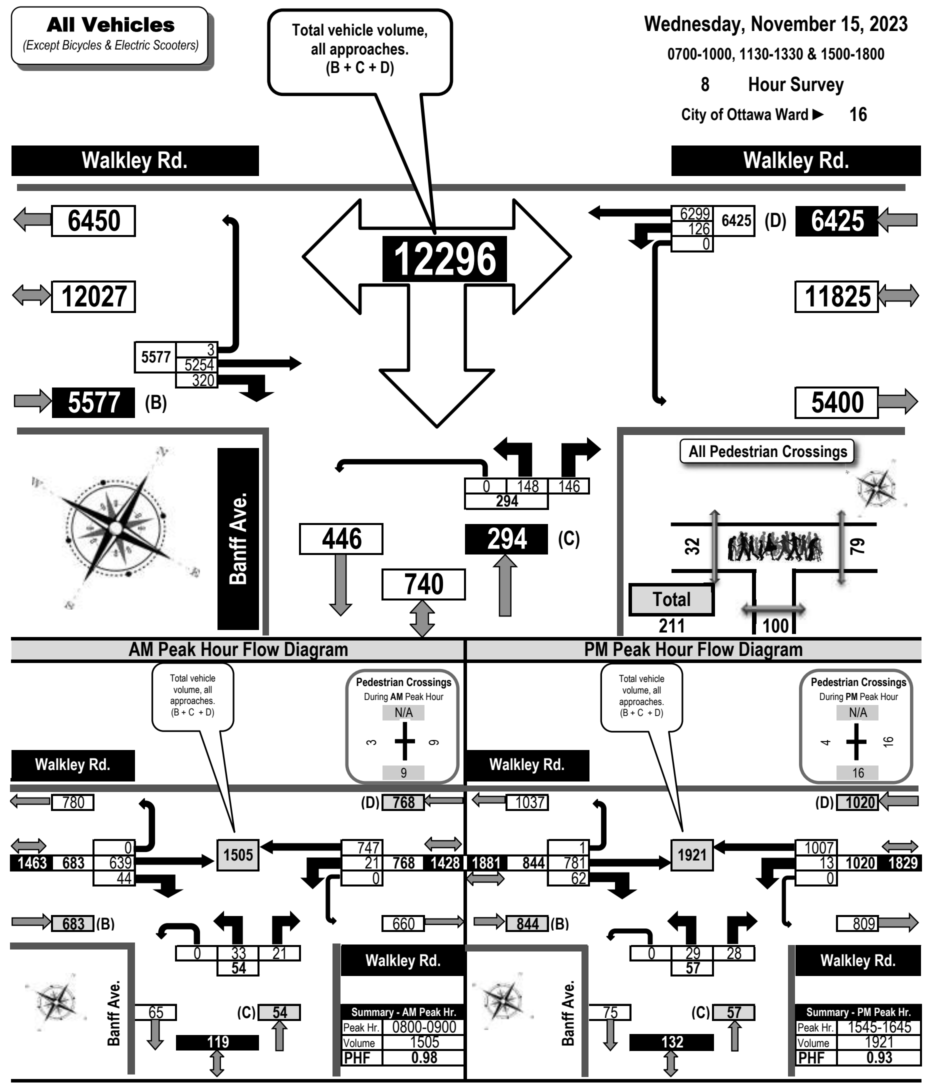
Wednesday, November 15, 2023

Turning Movement Count

Summary, AM and PM Peak Hour Flow Diagrams

All Vehicles Except Bicycles

Banff Avenue & Walkley Road — Ottawa, ON

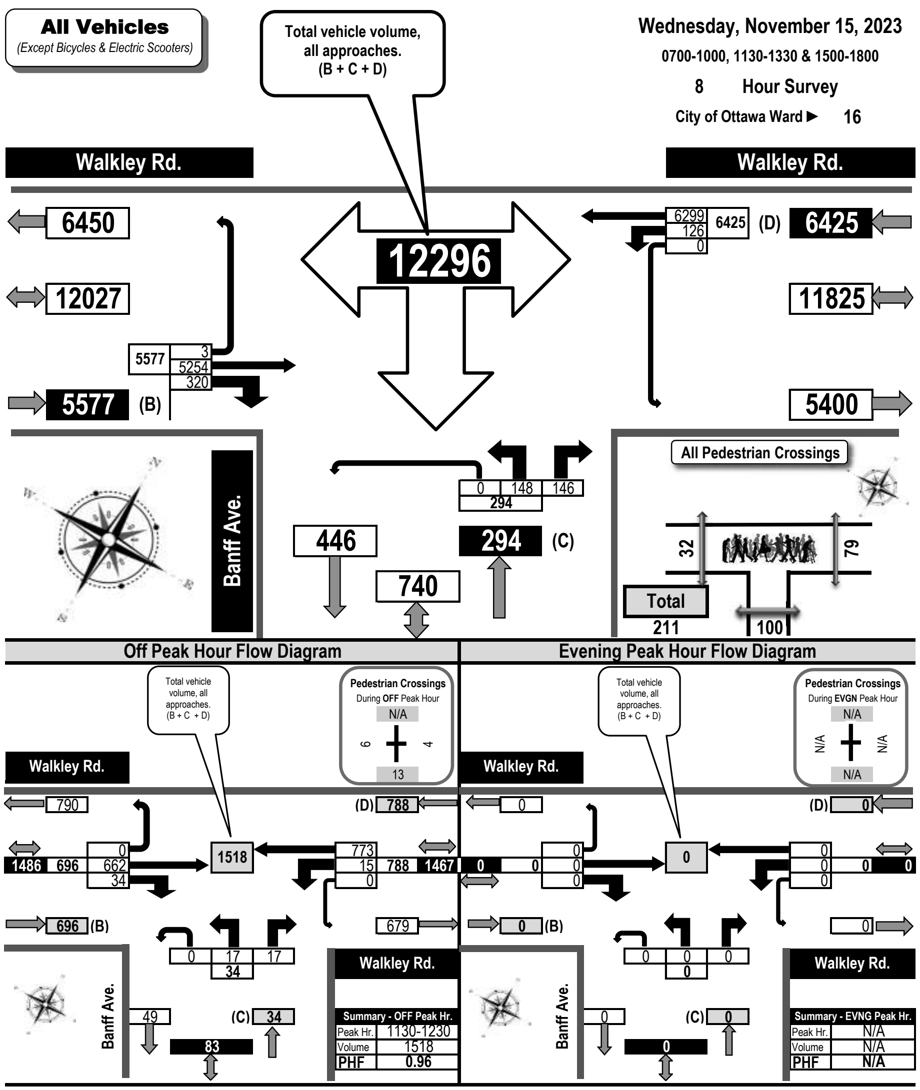


Turning Movement Count

Summary, OFF and EVENING Peak Hour Flow Diagrams

All Vehicles Except Bicycles

Banff Avenue & Walkley Road — **Ottawa, ON**



Turning Movement Count

Summary Report Including Peak Hours, AADT and Expansion Factors

All Vehicles Except Bicycles

Banff Avenue & Walkley Road — **Ottawa, ON**

Survey Date: Wednesday, November 15, 2023 **Start Time:** 0700 **AADT Factor:** 0.9

Weather AM: Mostly Cloudy +2º C **Survey Duration:** 8 Hrs. **Survey Hours:** 0700-1000, 1130-1330 & 1500-1800

Weather PM: Mostly Cloudy +8º C **Surveyor(s):** T. Carmody

	Walkley Rd. Eastbound					Walkley Rd. Westbound						Banff Ave. Northbound					N/A Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800		455	28	0	483	6	547		0	553	1036	14		15	0	29						29	1065
0800-0900		639	44	0	683	21	747		0	768	1451	33		21	0	54						54	1505
0900-1000		615	40	1	656	20	638		0	658	1314	4		10	0	14						14	1328
1130-1230		662	34	0	696	15	773		0	788	1484	17		17	0	34						34	1518
1230-1330		637	30	1	668	20	731		0	751	1419	13		14	0	27						27	1446
1500-1600		741	43	1	785	22	976		0	998	1783	18		26	0	44						44	1827
1600-1700		752	58	0	810	14	1040		0	1054	1864	29		26	0	55						55	1919
1700-1800		753	43	0	796	8	847		0	855	1651	20		17	0	37						37	1688
Totals		5254	320	3	5577	126	6299		0	6425	12002	148		146	0	294						294	12296

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard __weekday__ 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Equ. 12 Hr	0	7303	445	4	7752	175	8756	0	0	8931	16683	206	0	203	0	409	0	0	0	0	0	409	17091

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

AADT 12-hr	0	6573	400	4	6977	158	7880	0	0	8038	15015	185	0	183	0	368	0	0	0	0	0	368	15382

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

AADT 24 Hr	0	8610	524	5	9140	206	10323	0	0	10529	19669	243	0	239	0	482	0	0	0	0	0	482	20151

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡			0.98									Highest Hourly Vehicle Volume Between 0700h & 1000h											
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0800-0900	0	639	44	0	683	21	747	0	0	768	1451	33	0	21	0	54	0	0	0	0	0	54	1505
OFF Peak Hour Factor ➡			0.96									Highest Hourly Vehicle Volume Between 1130h & 1330h											
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1130-1230	0	662	34	0	696	15	773	0	0	788	1484	17	0	17	0	34	0	0	0	0	0	34	1518
PM Peak Hour Factor ➡			0.93									Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1545-1645	0	781	62	1	844	13	1007	0	0	1020	1864	29	0	28	0	57	0	0	0	0	0	57	1921

Comments:

OC Transpo & Para Transpo buses, private buses and school buses comprise 34.16% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 18.

Notes:

1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

Turning Movement Count

Heavy Vehicle Summary (FHWA Class 4 to 13)

Flow Diagram

Banff Avenue & Walkley Road — Ottawa, ON

Heavy Vehicles

(Construction Vehicles, Heavy Trucks, Buses & School Buses). ***Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.***

Total heavy vehicle volume, all approaches. (B + C + D)

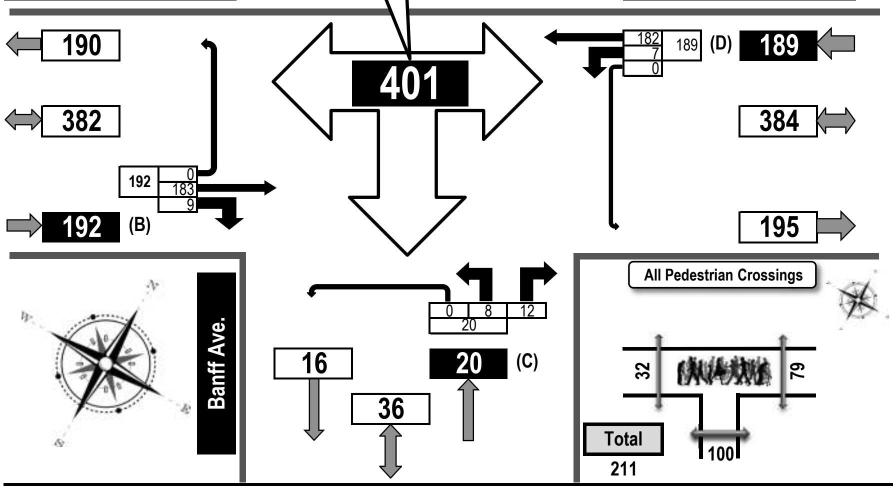
Heavy Vehicles Comprise **3.26%** of Total Traffic

Wednesday, November 15, 2023

0700-1000, 1130-1330 & 1500-1800

8 Hour Survey

City of Ottawa Ward ► 16



	Walkley Rd.					Walkley Rd.					Banff Ave.					N/A					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800		23	1	0	24	0	23		0	23	1		1	0	2						49
0800-0900		25	2	0	27	3	30		0	33	3		6	0	9						69
0900-1000		26	2	0	28	2	34		0	36	0		0	0	0						64
1130-1230		32	3	0	35	0	25		0	25	1		0	0	1						61
1230-1330		20	0	0	20	0	23		0	23	0		0	0	0						43
1500-1600		21	1	0	22	1	22		0	23	1		2	0	3						48
1600-1700		22	0	0	22	1	16		0	17	2		1	0	3						42
1700-1800		14	0	0	14	0	9		0	9	0		2	0	2						25
Totals		183	9	0	192	7	182		0	189	8		12	0	20						401

Comments:

OC Transpo & Para Transpo buses, private buses and school buses comprise 34.16% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 18.

Turning Movement Count

All Buses Summary (FHWA Class 4 ONLY)

Flow Diagram

Banff Avenue & Walkley Road — Ottawa, ON

Buses ONLY

(Transit, Intercity, School Buses & Other Buses). ***Bus totals ARE included in the all vehicles summary, heavy vehicle summary & flow diagrams.***

Total bus volume, all approaches. (B + C + D)

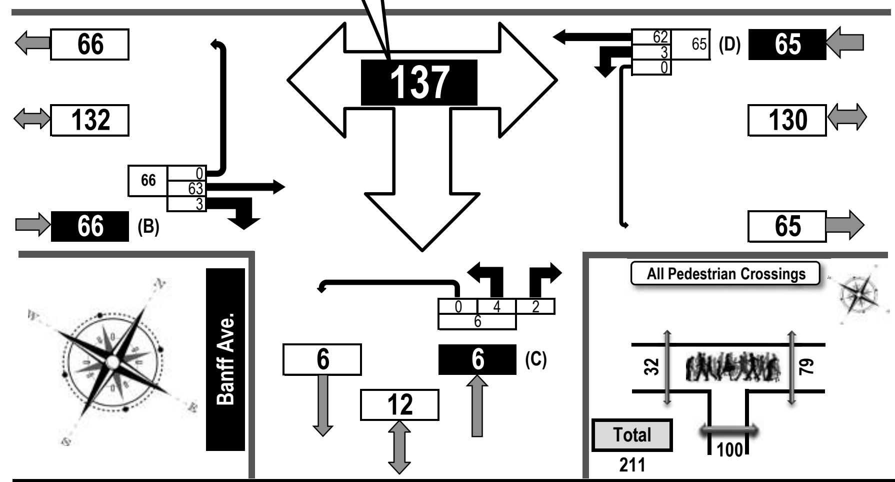
All Buses Comprise **1.11%** of Total Traffic and **34.16%** of the Heavy Vehicle Traffic

Wednesday, November 15, 2023

0700-1000, 1130-1330 & 1500-1800

8 Hour Survey

City of Ottawa Ward ► 16



	Walkley Rd.					Walkley Rd.					Banff Ave.					N/A					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800		8	1	0	9	0	10		0	10	1		1	0	2						21
0800-0900		7	0	0	7	0	13		0	13	2		1	0	3						23
0900-1000		10	1	0	11	1	12		0	13	0		0	0	0						24
1130-1230		5	0	0	5	0	6		0	6	0		0	0	0						11
1230-1330		7	0	0	7	0	4		0	4	0		0	0	0						11
1500-1600		7	1	0	8	1	8		0	9	0		0	0	0						17
1600-1700		14	0	0	14	1	6		0	7	1		0	0	1						22
1700-1800		5	0	0	5	0	3		0	3	0		0	0	0						8
Totals		63	3	0	66	3	62		0	65	4		2	0	6						137

Comments:

OC Transpo & Para Transpo buses, private buses and school buses comprise 34.16% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 18.

Turning Movement Count
Bicycle Summary
Flow Diagram

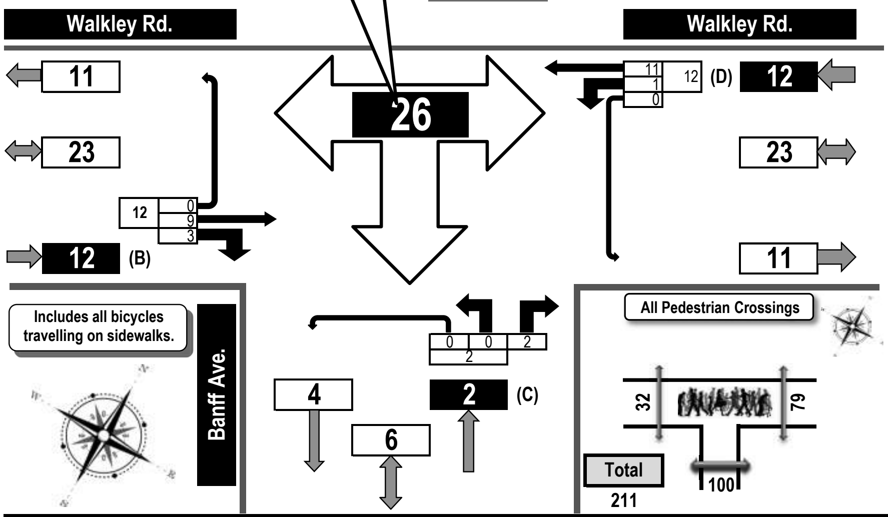
Banff Avenue & Walkley Road — **Ottawa, ON**

Bicycles
(Including electric bicycles and electric scooters)
Note:
Bicycle volumes are **NOT** included in vehicle totals.

Total bicycle volume, all approaches. (B + C + D)

Bicycles comprise **0.21%** of total traffic

Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 16



	Walkley Rd.					Walkley Rd.					Banff Ave.					N/A					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800		1	1	0	2	0	1		0	1	0		0	0	0						3
0800-0900		2	0	0	2	0	1		0	1	0		0	0	0						3
0900-1000		0	0	0	0	0	1		0	1	0		1	0	1						2
1130-1230		0	0	0	0	0	1		0	1	0		0	0	0						1
1230-1330		2	0	0	2	0	1		0	1	0		0	0	0						3
1500-1600		1	0	0	1	1	0		0	1	0		0	0	0						2
1600-1700		1	1	0	2	0	4		0	4	0		0	0	0						6
1700-1800		2	1	0	3	0	2		0	2	0		1	0	1						6
Totals		9	3	0	12	1	11		0	12	0		2	0	2						26

Comments:
OC Transpo & Para Transpo buses, private buses and school buses comprise 34.16% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 18.

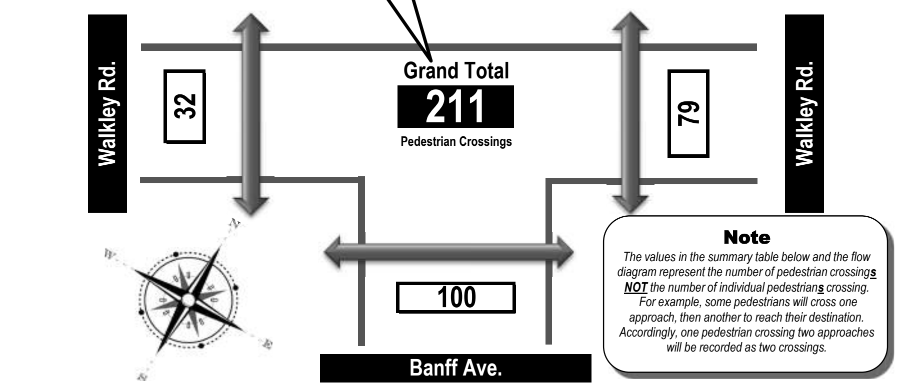
Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Banff Avenue & Walkley Road — **Ottawa, ON**

Pedestrian Crossings

Total number of all pedestrian crossings

Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 16



Time Period	West Side Crossing Walkley Rd.	East Side Crossing Walkley Rd.	Street Total	South Side Crossing Banff Ave.	North Side Crossing N/A	Street Total	Grand Total
0700-0800	3	12	15	6		6	21
0800-0900	3	9	12	9		9	21
0900-1000	1	3	4	10		10	14
1130-1230	6	4	10	13		13	23
1230-1330	6	4	10	8		8	18
1500-1600	4	23	27	13		13	40
1600-1700	5	18	23	20		20	43
1700-1800	4	6	10	21		21	31
Totals	32	79	111	100		100	211

Comments:
OC Transpo & Para Transpo buses, private buses and school buses comprise 34.16% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 18.

Transportation Services - Traffic Services

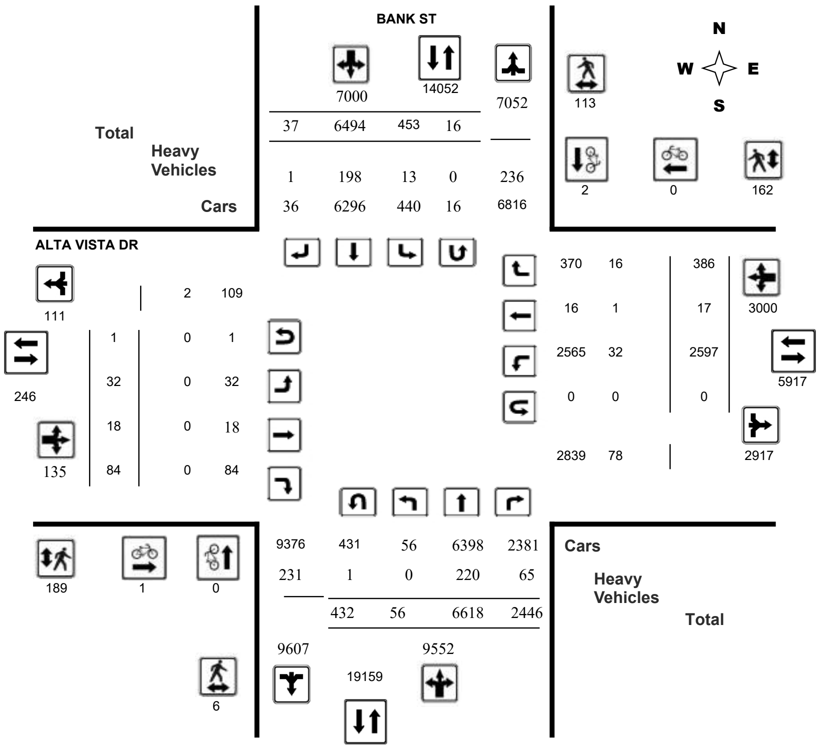
Turning Movement Count - Study Results

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision

Full Study Diagram



Ottawa

Transportation Services - Traffic Services

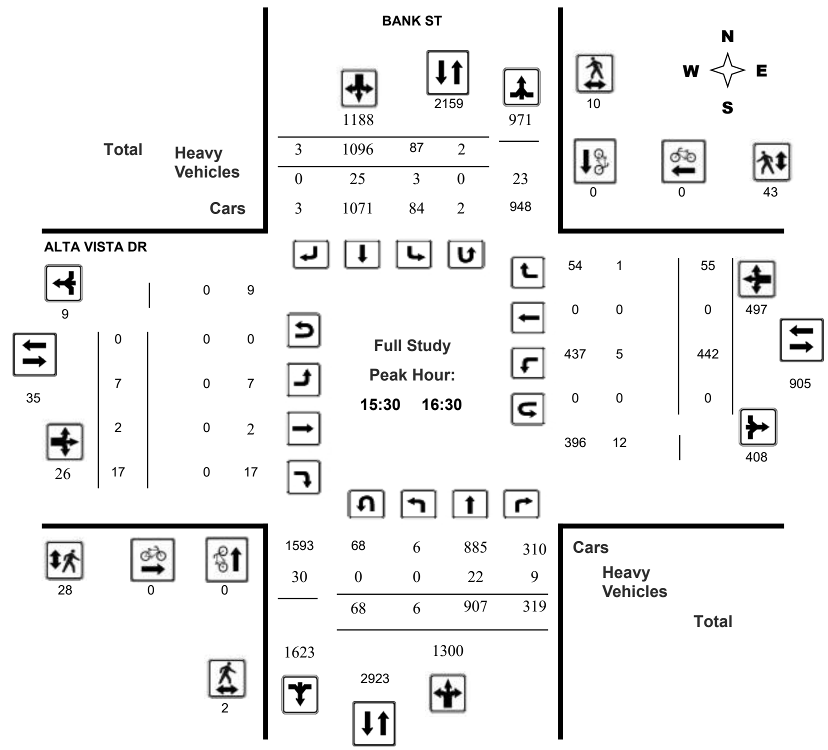
Turning Movement Count - Study Results

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 WO No: 40183

Start Time: 07:00 Device: Miovision

Full Study Peak Hour Diagram



Ottawa

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, February 24, 2022

Total Observed U-Turns

Northbound: 432 Southbound: 16

Eastbound: 1 Westbound: 0

AADT Factor

.90

	BANK ST									ALTA VISTA DR										
	Northbound				Southbound					Eastbound				Westbound						
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	15	611	210	**836**	21	436	5	**462**	**1298**	1	0	6	**7**	137	1	12	**150**	**157**	**1455**
08:00 09:00	7	890	520	**1417**	25	515	4	**544**	**1961**	4	1	4	**9**	298	1	24	**323**	**332**	**2293**
09:00 10:00	8	693	244	**945**	51	666	5	**722**	**1667**	6	1	4	**11**	296	2	40	**338**	**349**	**2016**
11:30 12:30	5	796	298	**1099**	66	821	6	**893**	**1992**	2	9	12	**23**	327	2	54	**383**	**406**	**2398**
12:30 13:30	13	875	252	**1140**	82	853	7	**942**	**2082**	5	2	8	**15**	296	9	65	**370**	**385**	**2467**
15:00 16:00	4	949	347	**1300**	79	1009	6	**1094**	**2394**	10	1	15	**26**	462	2	66	**530**	**556**	**2950**
16:00 17:00	4	901	306	**1211**	75	1092	3	**1170**	**2381**	1	3	15	**19**	424	0	62	**486**	**505**	**2886**
17:00 18:00	0	903	269	**1172**	54	1102	1	**1157**	**2329**	3	1	20	**24**	357	0	63	**420**	**444**	**2773**
Sub Total	56	6618	2446	**9120**	453	6494	37	**6984**	**16104**	32	18	84	**134**	2597	17	386	**3000**	**3134**	**19238**
U Turns				**432**				**16**	**448**				**1**				**0**	**1**	**449**
Total	56	6618	2446	**9552**	453	6494	37	**7000**	**16552**	32	18	84	**135**	2597	17	386	**3000**	**3135**	**19687**
EQ 12Hr	78	9199	3400	**13277**	630	9027	51	**9730**	**23007**	44	25	117	**188**	3610	24	537	**4170**	**4358**	**27365**
AVG 12Hr	70	8279	3060	**11949**	567	10642	61	**8757**	**20706**	40	22	105	**169**	3249	22	483	**3753**	**3922**	**24628**
AVG 24Hr	92	10845	4009	**15653**	743	13941	80	**11472**	**27125**	52	29	138	**221**	4256	29	633	**4916**	**5138**	**32263**

Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **.90**

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Ottawa

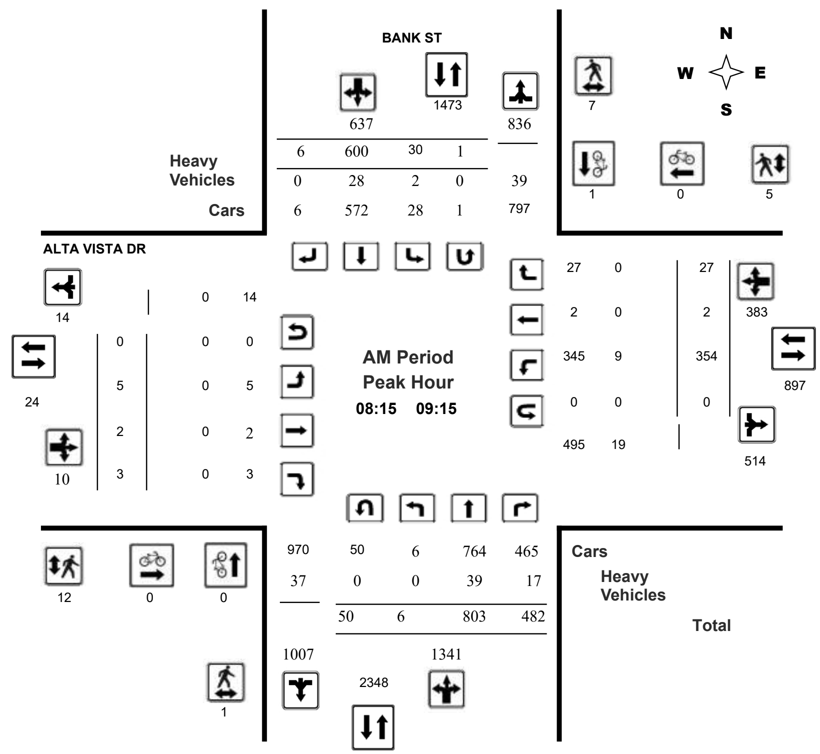
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision



Comments

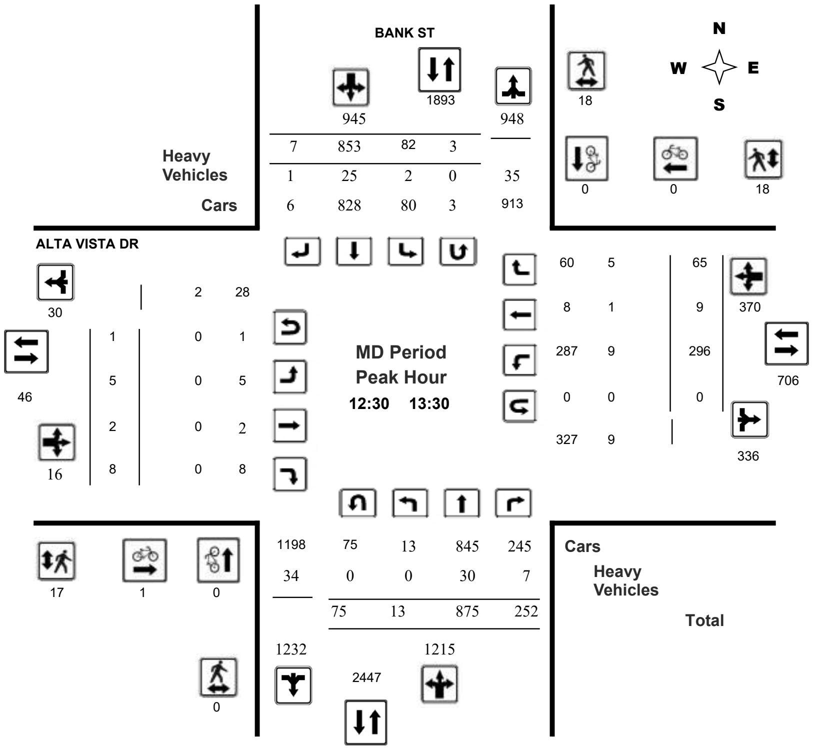
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision



Comments

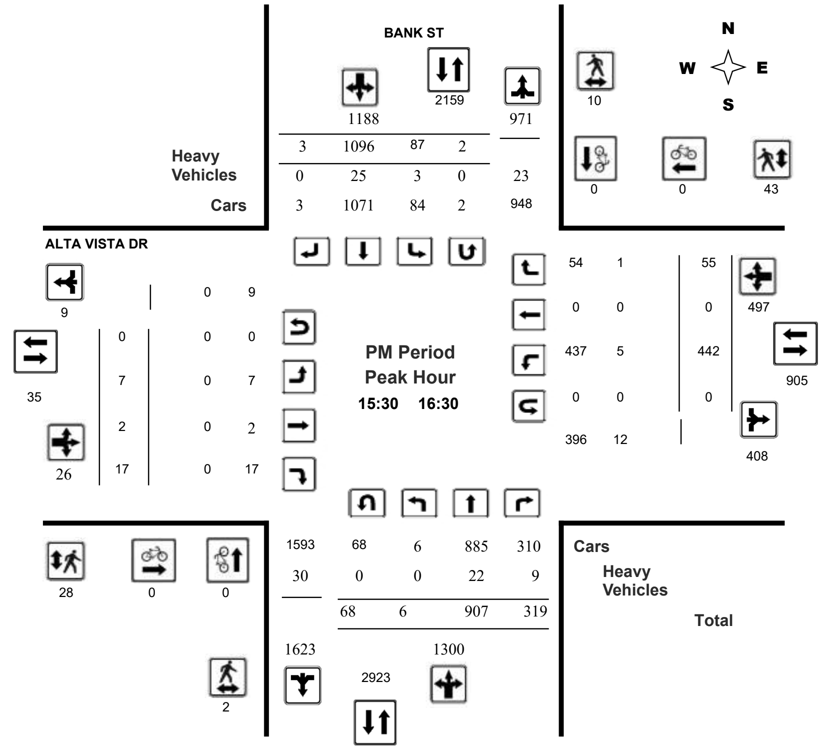
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		BANK ST										ALTA VISTA DR										
		Northbound				Southbound						Eastbound				Westbound						
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT		LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT		Grand Total
07:00	07:15	0	117	35	154	4	80	0	84	238		0	0	0	0	29	0	4	33	33		271
07:15	07:30	2	147	57	208	0	104	2	106	314		0	0	3	3	31	0	3	34	37		351
07:30	07:45	6	180	49	237	9	118	1	128	365		0	0	0	0	31	1	5	37	37		402
07:45	08:00	7	167	69	244	8	134	2	144	388		1	0	3	4	46	0	0	46	50		438
08:00	08:15	2	227	124	356	4	109	0	113	469		0	0	1	1	47	0	5	52	53		522
08:15	08:30	3	221	165	395	8	98	1	108	503		2	0	0	2	100	1	2	103	105		608
08:30	08:45	2	211	94	323	9	132	3	144	467		1	0	1	2	68	0	9	77	79		546
08:45	09:00	0	231	137	383	4	176	0	180	563		1	1	2	4	83	0	8	91	95		658
09:00	09:15	1	140	86	240	9	194	2	205	445		1	1	0	2	103	1	8	112	114		559
09:15	09:30	0	182	54	249	15	141	0	156	405		0	0	2	2	81	0	9	90	92		497
09:30	09:45	1	193	50	254	10	144	1	155	409		4	0	1	5	51	0	6	57	62		471
09:45	10:00	6	178	54	248	17	187	2	206	454		1	0	1	2	61	1	17	79	81		535
11:30	11:45	0	200	63	275	17	190	3	210	485		0	1	0	1	78	0	12	90	91		576
11:45	12:00	2	198	72	281	19	227	1	249	530		1	1	2	4	70	0	8	78	82		612
12:00	12:15	1	202	90	320	11	194	0	206	526		0	6	6	12	89	1	16	106	118		644
12:15	12:30	2	196	73	288	19	210	2	233	521		1	1	4	6	90	1	18	109	115		636
12:30	12:45	5	235	78	341	30	184	1	215	556		2	0	2	5	64	2	9	75	80		636
12:45	13:00	1	187	50	251	16	219	4	239	490		2	0	1	3	84	4	23	111	114		604
13:00	13:15	3	235	61	326	15	238	2	255	581		1	2	4	7	65	2	13	80	87		668
13:15	13:30	4	218	63	297	21	212	0	236	533		0	0	1	1	83	1	20	104	105		638
15:00	15:15	1	255	97	365	16	217	2	236	601		3	1	3	7	113	2	12	127	134		735
15:15	15:30	1	241	81	333	19	239	1	259	592		0	0	4	4	122	0	25	147	151		743
15:30	15:45	0	243	73	332	31	254	2	287	619		3	0	4	7	106	0	14	120	127		746
15:45	16:00	2	210	96	328	13	299	1	315	643		4	0	4	8	121	0	15	136	144		787
16:00	16:15	2	211	61	289	23	281	0	304	593		0	1	4	5	113	0	16	129	134		727
16:15	16:30	2	243	89	351	20	262	0	282	633		0	1	5	6	102	0	10	112	118		751
16:30	16:45	0	201	78	293	19	268	2	290	583		1	1	2	4	109	0	18	127	131		714
16:45	17:00	0	246	78	340	13	281	1	296	636		0	0	4	4	100	0	18	118	122		758
17:00	17:15	0	238	69	330	10	302	0	313	643		3	1	14	18	93	0	21	114	132		775
17:15	17:30	0	238	57	314	16	296	0	313	627		0	0	4	4	86	0	11	97	101		728
17:30	17:45	0	205	79	303	11	250	0	261	564		0	0	1	1	86	0	18	104	105		669
17:45	18:00	0	222	64	304	17	254	1	272	576		0	0	1	1	92	0	13	105	106		682
Total:		56	6618	2446	9552	453	6494	37	7000	16552		32	18	84	135	2597	17	386	3000	3135		19,687

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

		BANK ST			ALTA VISTA DR			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	0	1	1	0	0	0	1
08:30	08:45	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	1	0	1	1
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
17:00	17:15	0	1	1	0	0	0	1
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
Total		0	2	**2**	1	0	1	3

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

Time Period	BANK ST NB Approach (E or W Crossing)	BANK ST SB Approach (E or W Crossing)	Total	ALTA VISTA DR EB Approach (N or S Crossing)	ALTA VISTA DR WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	**0**	0	0	**0**	**0**
07:15 07:30	0	2	**2**	1	3	**4**	**6**
07:30 07:45	0	0	**0**	7	0	**7**	**7**
07:45 08:00	0	0	**0**	1	2	**3**	**3**
08:00 08:15	0	6	**6**	5	3	**8**	**14**
08:15 08:30	1	1	**2**	1	2	**3**	**5**
08:30 08:45	0	0	**0**	3	1	**4**	**4**
08:45 09:00	0	4	**4**	3	1	**4**	**8**
09:00 09:15	0	2	**2**	5	1	**6**	**8**
09:15 09:30	0	7	**7**	12	1	**13**	**20**
09:30 09:45	0	2	**2**	1	3	**4**	**6**
09:45 10:00	0	7	**7**	10	1	**11**	**18**
11:30 11:45	1	4	**5**	5	12	**17**	**22**
11:45 12:00	0	4	**4**	5	8	**13**	**17**
12:00 12:15	0	3	**3**	4	6	**10**	**13**
12:15 12:30	0	5	**5**	7	10	**17**	**22**
12:30 12:45	0	9	**9**	8	3	**11**	**20**
12:45 13:00	0	4	**4**	4	4	**8**	**12**
13:00 13:15	0	4	**4**	2	5	**7**	**11**
13:15 13:30	0	1	**1**	3	6	**9**	**10**
15:00 15:15	0	4	**4**	2	10	**12**	**16**
15:15 15:30	1	13	**14**	20	10	**30**	**44**
15:30 15:45	2	3	**5**	5	17	**22**	**27**
15:45 16:00	0	4	**4**	8	10	**18**	**22**
16:00 16:15	0	2	**2**	5	9	**14**	**16**
16:15 16:30	0	1	**1**	10	7	**17**	**18**
16:30 16:45	1	2	**3**	21	1	**22**	**25**
16:45 17:00	0	0	**0**	4	2	**6**	**6**
17:00 17:15	0	7	**7**	9	4	**13**	**20**
17:15 17:30	0	5	**5**	9	14	**23**	**28**
17:30 17:45	0	4	**4**	8	4	**12**	**16**
17:45 18:00	0	3	**3**	1	2	**3**	**6**
Total	6	113	**119**	189	162	**351**	**470**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

Time Period		BANK ST Northbound LT	ST	RT	N TOT	Southbound LT	ST	RT	S TOT	STR TOT	ALTA VISTA DR Eastbound LT	ST	RT	E TOT	Westbound LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	6	1	**11**	0	4	0	**10**	**21**	0	0	0	**0**	0	0	0	**1**	**1**	**11**
07:15	07:30	0	9	0	**14**	0	5	0	**14**	**28**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
07:30	07:45	0	12	1	**19**	0	6	0	**19**	**38**	0	0	0	**0**	0	0	1	**2**	**2**	**20**
07:45	08:00	0	4	6	**14**	0	4	0	**8**	**22**	0	0	0	**0**	0	0	0	**6**	**6**	**14**
08:00	08:15	0	4	5	**20**	0	9	0	**14**	**34**	0	0	0	**0**	2	0	1	**8**	**8**	**21**
08:15	08:30	0	9	1	**18**	1	4	0	**14**	**32**	0	0	0	**0**	4	0	0	**6**	**6**	**19**
08:30	08:45	0	6	9	**22**	0	6	0	**12**	**34**	0	0	0	**0**	1	0	0	**10**	**10**	**22**
08:45	09:00	0	18	6	**33**	1	8	0	**27**	**60**	0	0	0	**0**	1	0	0	**8**	**8**	**34**
09:00	09:15	0	6	1	**20**	0	10	0	**16**	**36**	0	0	0	**0**	3	0	0	**4**	**4**	**20**
09:15	09:30	0	9	0	**15**	0	6	0	**18**	**33**	0	0	0	**0**	0	0	3	**3**	**3**	**18**
09:30	09:45	0	2	3	**11**	0	5	0	**7**	**18**	0	0	0	**0**	1	0	0	**4**	**4**	**11**
09:45	10:00	0	9	3	**19**	1	7	0	**21**	**40**	0	0	0	**0**	0	0	4	**8**	**8**	**24**
11:30	11:45	0	5	0	**14**	0	8	0	**14**	**28**	0	0	0	**0**	1	0	1	**2**	**2**	**15**
11:45	12:00	0	7	2	**21**	1	12	0	**20**	**41**	0	0	0	**0**	0	0	0	**3**	**3**	**22**
12:00	12:15	0	9	1	**18**	2	7	0	**18**	**36**	0	0	0	**0**	1	0	0	**4**	**4**	**20**
12:15	12:30	0	10	1	**22**	0	9	0	**19**	**41**	0	0	0	**0**	0	0	0	**1**	**1**	**21**
12:30	12:45	0	9	1	**15**	0	3	1	**13**	**28**	0	0	0	**1**	2	0	0	**3**	**4**	**16**
12:45	13:00	0	8	2	**16**	1	5	0	**16**	**32**	0	0	0	**0**	1	0	2	**6**	**6**	**19**
13:00	13:15	0	7	4	**22**	1	7	0	**15**	**37**	0	0	0	**1**	4	1	0	**10**	**11**	**24**
13:15	13:30	0	6	0	**18**	0	10	0	**19**	**37**	0	0	0	**0**	2	0	3	**5**	**5**	**21**
15:00	15:15	0	7	4	**16**	2	5	0	**14**	**30**	0	0	0	**0**	0	0	0	**6**	**6**	**18**
15:15	15:30	0	12	2	**26**	0	10	0	**22**	**48**	0	0	0	**0**	2	0	0	**4**	**4**	**26**
15:30	15:45	0	6	2	**19**	0	9	0	**15**	**34**	0	0	0	**0**	2	0	0	**4**	**4**	**19**
15:45	16:00	0	5	5	**20**	0	8	0	**14**	**34**	0	0	0	**0**	2	0	1	**8**	**8**	**21**
16:00	16:15	0	6	0	**12**	1	5	0	**12**	**24**	0	0	0	**0**	1	0	0	**2**	**2**	**13**
16:15	16:30	0	5	2	**10**	2	3	0	**10**	**20**	0	0	0	**0**	0	0	0	**4**	**4**	**12**
16:30	16:45	0	3	1	**11**	0	6	0	**9**	**20**	0	0	0	**0**	1	0	0	**2**	**2**	**11**
16:45	17:00	0	3	0	**6**	0	3	0	**6**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**6**
17:00	17:15	0	3	0	**7**	0	4	0	**7**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**7**
17:15	17:30	0	6	1	**10**	0	2	0	**8**	**18**	0	0	0	**0**	1	0	0	**2**	**2**	**10**
17:30	17:45	0	4	0	**10**	0	6	0	**10**	**20**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
17:45	18:00	0	5	1	**8**	0	2	0	**7**	**15**	0	0	0	**0**	0	0	0	**1**	**1**	**8**
Total:	None	0	220	65	**517**	13	198	1	**448**	**965**	0	0	0	**2**	32	1	16	**127**	**129**	**547**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ALTA VISTA DR @ BANK ST

Survey Date: Thursday, February 24, 2022 **WO No:** 40183

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

Time Period		BANK ST Northbound U-Turn Total	BANK ST Southbound U-Turn Total	ALTA VISTA DR Eastbound U-Turn Total	ALTA VISTA DR Westbound U-Turn Total	Total
07:00	07:15	2	0	0	0	2
07:15	07:30	2	0	0	0	2
07:30	07:45	2	0	0	0	2
07:45	08:00	1	0	0	0	1
08:00	08:15	3	0	0	0	3
08:15	08:30	6	1	0	0	7
08:30	08:45	16	0	0	0	16
08:45	09:00	15	0	0	0	15
09:00	09:15	13	0	0	0	13
09:15	09:30	13	0	0	0	13
09:30	09:45	10	0	0	0	10
09:45	10:00	10	0	0	0	10
11:30	11:45	12	0	0	0	12
11:45	12:00	9	2	0	0	11
12:00	12:15	27	1	0	0	28
12:15	12:30	17	2	0	0	19
12:30	12:45	23	0	1	0	24
12:45	13:00	13	0	0	0	13
13:00	13:15	27	0	0	0	27
13:15	13:30	12	3	0	0	15
15:00	15:15	12	1	0	0	13
15:15	15:30	10	0	0	0	10
15:30	15:45	16	0	0	0	16
15:45	16:00	20	2	0	0	22
16:00	16:15	15	0	0	0	15
16:15	16:30	17	0	0	0	17
16:30	16:45	14	1	0	0	15
16:45	17:00	16	1	0	0	17
17:00	17:15	23	1	0	0	24
17:15	17:30	19	1	0	0	20
17:30	17:45	19	0	0	0	19
17:45	18:00	18	0	0	0	18
Total		432	16	1	0	449

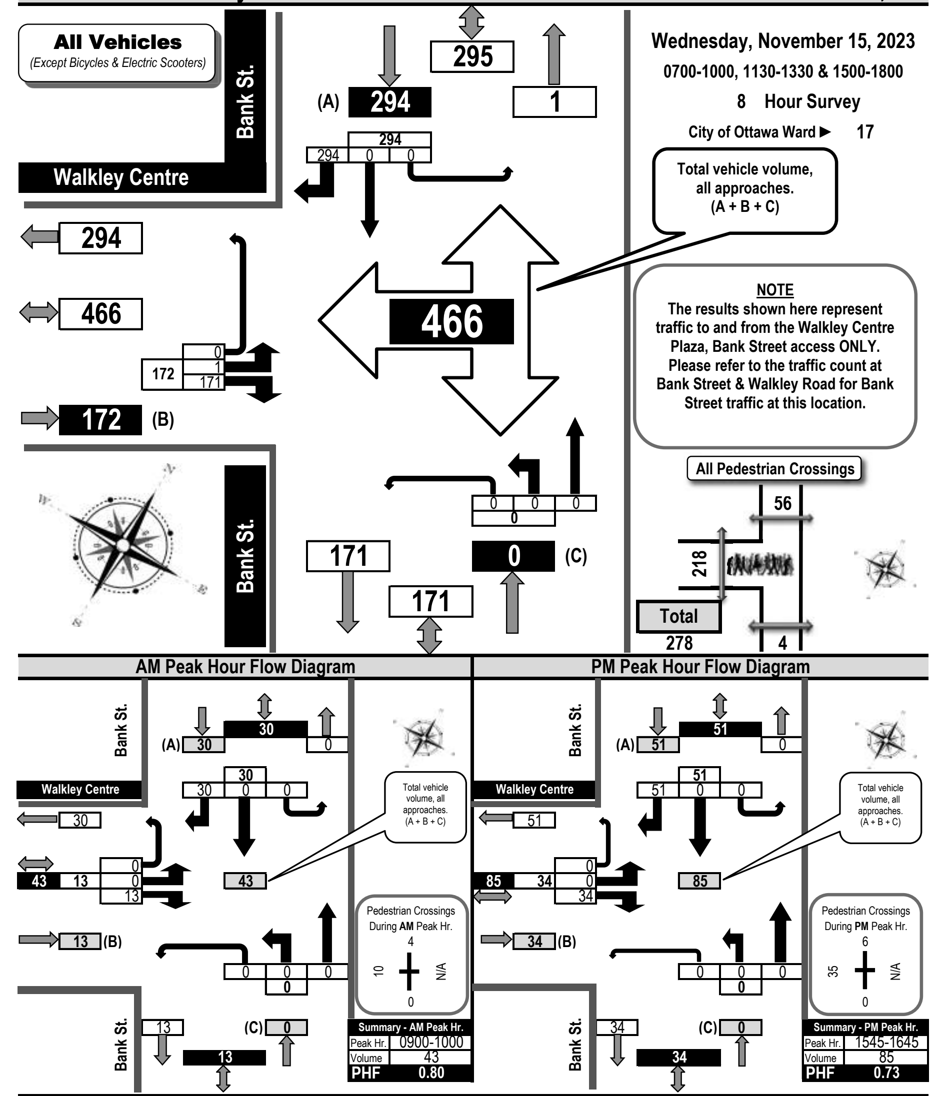
Diagrams, Maps and Photographs

Bank Street & Walkley Centre Access

Wednesday, November 15, 2023

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

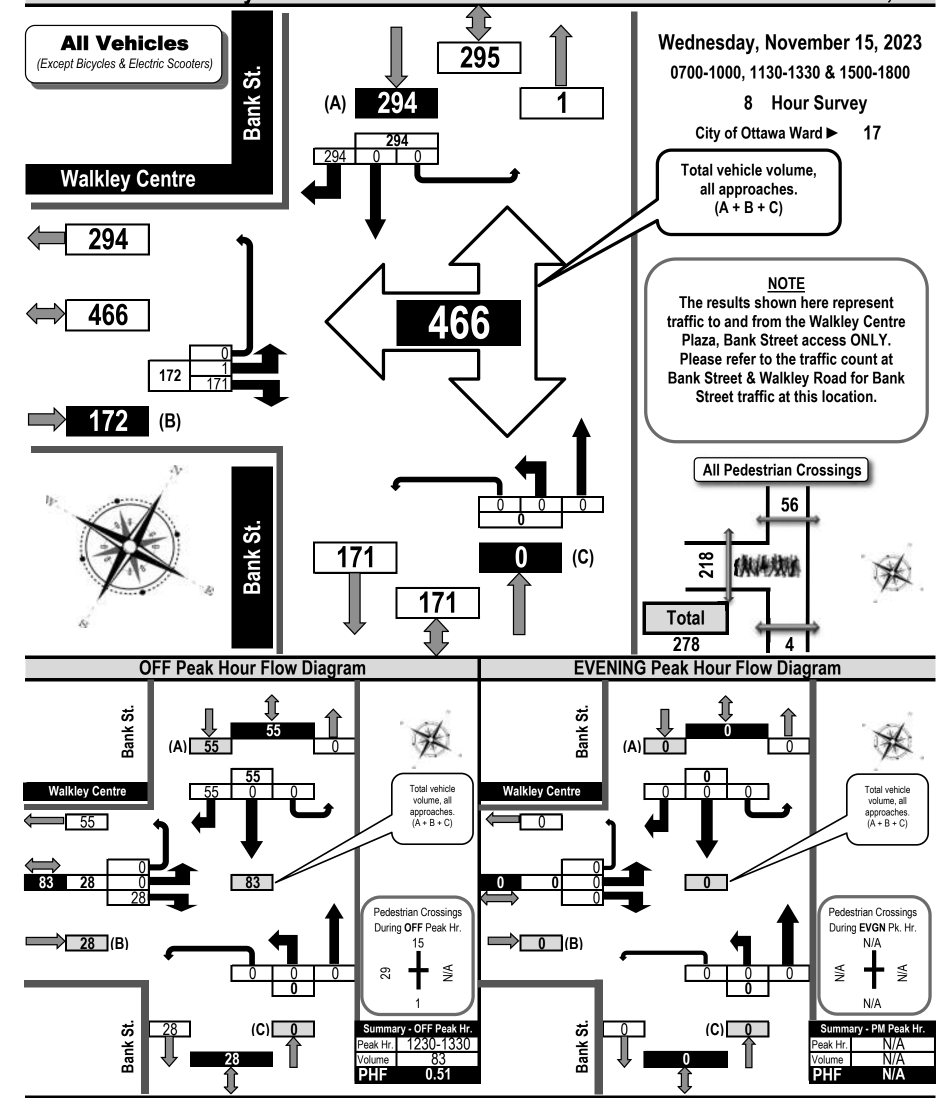
Bank Street & Walkley Centre Access — Ottawa, ON



Printed on: 11/27/2023 Prepared by: thetrafficspecialist@gmail.com Flow Diagrams: All Vehicles AM PM Peak

Turning Movement Count
Summary, OFF and EVGN Peak Hour Flow Diagrams
All Vehicles Except Bicycles

Bank Street & Walkley Centre Access — Ottawa, ON



Printed on: 11/27/2023 Prepared by: thetrafficspecialist@gmail.com Flow Diagrams: All Vehicles OFF EVGN Peak

Turning Movement Count

Summary Report Including Peak Hours, AADT and Expansion Factors

All Vehicles Except Bicycles

Bank Street & Walkley Centre Access — **Ottawa, ON**

Survey Date:	Wednesday, November 15, 2023		**Start Time:**	0700	**AADT Factor:**	0.9
Weather AM:	Mostly Cloudy +2º C	**Survey Duration:** 8 Hrs.	**Survey Hours:**	0700-1000, 1130-1330 & 1500-1800		
Weather PM:	Mostly Cloudy +8º C		**Surveyor(s):**	T. Carmody		

	Walkley Centre					N/A						Bank St.					Bank St.						
	Eastbound					Westbound						Northbound					Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	0		5	0	5						5	0	0		0	0		0	10	0	10	10	15
0800-0900	0		12	0	12						12	0	0		0	0		0	17	0	17	17	29
0900-1000	0		13	0	13						13	0	0		0	0		0	30	0	30	30	43
1130-1230	0		26	0	26						26	0	0		0	0		0	44	0	44	44	70
1230-1330	0		28	0	28						28	0	0		0	0		0	55	0	55	55	83
1500-1600	0		26	0	26						26	0	0		0	0		0	49	0	49	49	75
1600-1700	0		32	0	32						32	0	0		0	0		0	47	0	47	47	79
1700-1800	1		29	0	30						30	0	0		0	0		0	42	0	42	42	72
Totals	1		171	0	172						172	0	0		0	0		0	294	0	294	294	466

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard <u>weekday</u> 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
Equ. 12 Hr	1	0	238	0	239	0	0	0	0	0	239	0	0	0	0	0	0	0	409	0	409	409	648
AADT 12-hr	1	0	214	0	215	0	0	0	0	0	215	0	0	0	0	0	0	0	368	0	368	368	583
AADT 24 Hr	2	0	280	0	282	0	0	0	0	0	282	0	0	0	0	0	0	0	482	0	482	482	764

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡ 0.51												Highest Hourly Vehicle Volume Between 0700h & 1000h											
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0900-1000	0	0	13	0	13	0	0	0	0	0	13	0	0	0	0	0	0	0	30	0	30	30	43
OFF Peak Hour Factor ➡ 0.80												Highest Hourly Vehicle Volume Between 1130h & 1330h											
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1230-1330	0	0	28	0	28	0	0	0	0	0	28	0	0	0	0	0	0	0	55	0	55	55	83
PM Peak Hour Factor ➡ 0.73												Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1545-1645	0	0	34	0	34	0	0	0	0	0	34	0	0	0	0	0	0	0	51	0	51	51	85

Comments:

School buses comprise 16.67% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 17 & 18. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Bank Street. At 17h57, a driver turned left from the access to Bank Street northbound. ALL PEAK HOUR VOLUMES REFER ONLY TO TRAFFIC TO AND FROM THE WALKLEY CENTRE PLAZA ACCESS.

<u>Notes:</u>

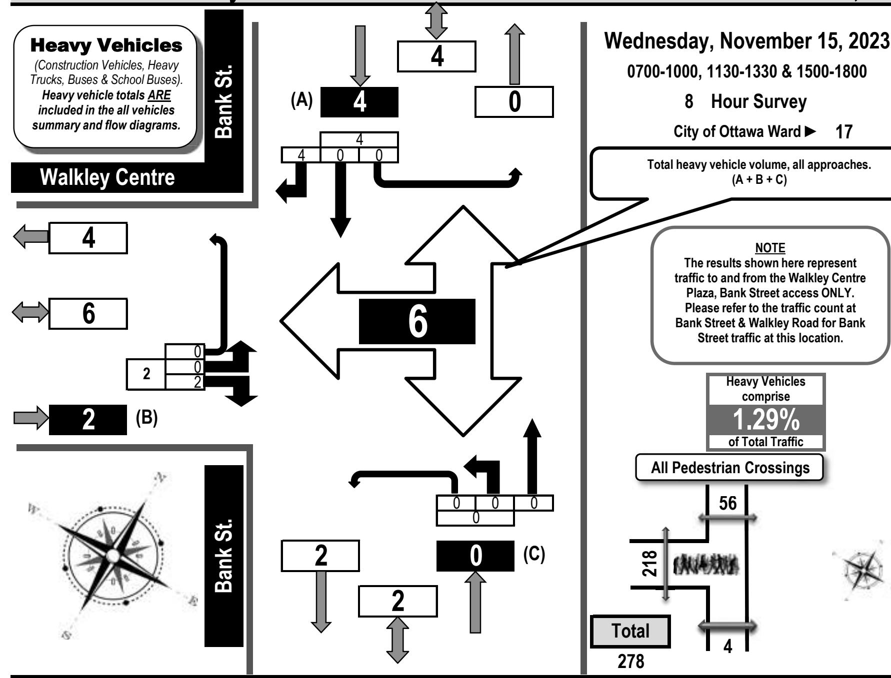
1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

Turning Movement Count

Heavy Vehicle Summary (FHWA Class 4 to 13)

Flow Diagram

Bank Street & Walkley Centre Access — **Ottawa, ON**



	Walkley Centre					N/A					Bank St.					Bank St.					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0		0	0	0						0	0		0	0		0	0	0	0	0
0800-0900	0		0	0	0						0	0		0	0		0	0	0	0	0
0900-1000	0		1	0	1						0	0		0	0		0	0	0	0	1
1130-1230	0		1	0	1						0	0		0	0		0	1	0	1	2
1230-1330	0		0	0	0						0	0		0	0		0	2	0	2	2
1500-1600	0		0	0	0						0	0		0	0		0	0	0	0	0
1600-1700	0		0	0	0						0	0		0	0		0	1	0	1	1
1700-1800	0		0	0	0						0	0		0	0		0	0	0	0	0
Totals	0		2	0	2						0	0		0	0		0	4	0	4	6

Comments:

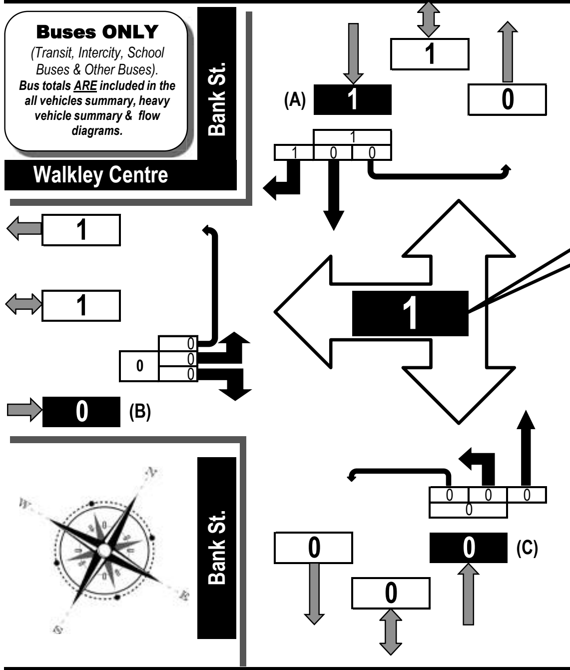
School buses comprise 16.67% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 17 & 18. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Bank Street. At 17h57, a driver turned left from the access to Bank Street northbound. ALL PEAK HOUR VOLUMES REFER ONLY TO TRAFFIC TO AND FROM THE WALKLEY CENTRE PLAZA ACCESS.

Turning Movement Count

All Buses Summary (FHWA Class 4 ONLY)

Flow Diagram

Bank Street & Walkley Centre Access Ottawa, ON



Wednesday, November 15, 2023

0700-1000, 1130-1330 & 1500-1800

8 Hour Survey

City of Ottawa Ward ► 17

	Walkley Centre					N/A					Bank St.					Bank St.					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0		0	0	0						0	0		0	0		0	0	0	0	0
0800-0900	0		0	0	0						0	0		0	0		0	0	0	0	0
0900-1000	0		0	0	0						0	0		0	0		0	0	0	0	0
1130-1230	0		0	0	0						0	0		0	0		0	0	0	0	0
1230-1330	0		0	0	0						0	0		0	0		0	0	0	0	0
1500-1600	0		0	0	0						0	0		0	0		0	0	0	0	0
1600-1700	0		0	0	0						0	0		0	0		0	1	0	1	1
1700-1800	0		0	0	0						0	0		0	0		0	0	0	0	0
Totals	0		0	0	0						0	0		0	0		0	1	0	1	1

Comments:

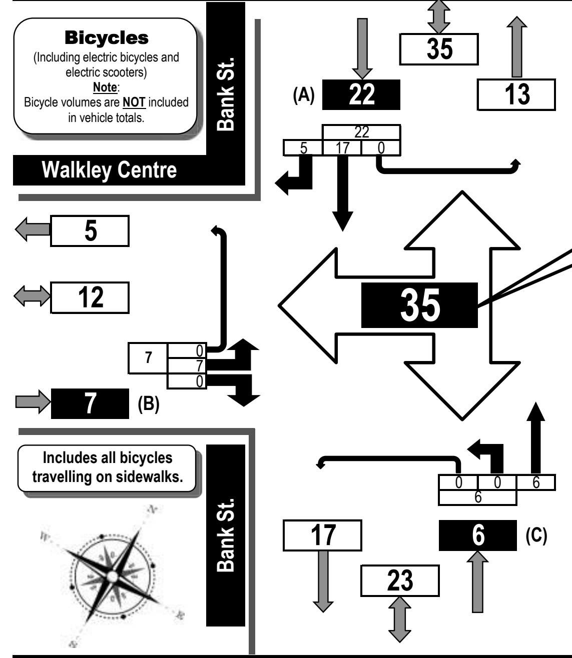
School buses comprise 16.67% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 17 & 18. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Bank Street. At 17h57, a driver turned left from the access to Bank Street northbound. ALL PEAK HOUR VOLUMES REFER ONLY TO TRAFFIC TO AND FROM THE WALKLEY CENTRE PLAZA ACCESS.

Turning Movement Count

Bicycle Summary

Flow Diagram

Bank Street & Walkley Centre Access Ottawa, ON



Wednesday, November 15, 2023

0700-1000, 1130-1330 & 1500-1800

8 Hour Survey

City of Ottawa Ward ► 17

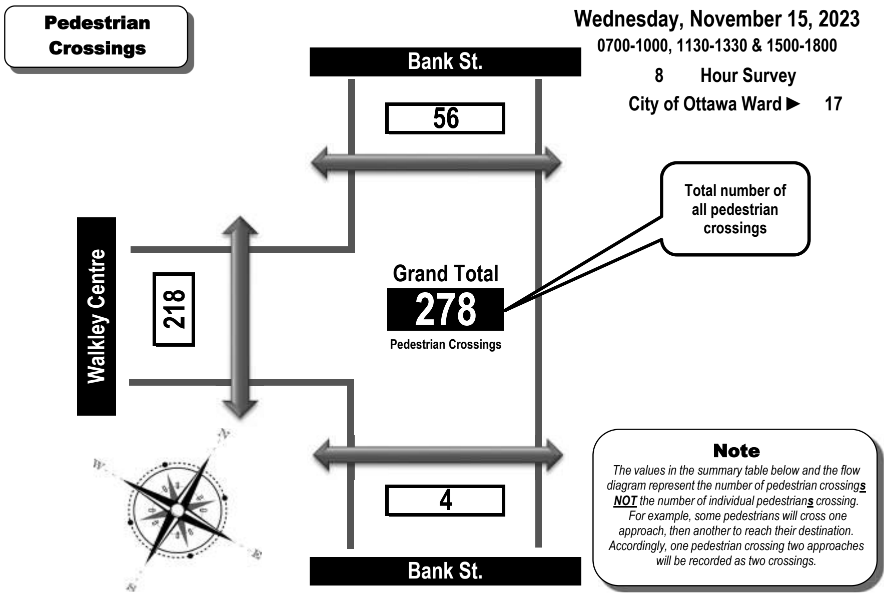
	Walkley Centre					N/A					Bank St.					Bank St.					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0		0	0	0						0	0		0	0		1	0	0	1	1
0800-0900	1		0	0	1						0	0		0	0		0	0	0	0	1
0900-1000	0		0	0	0						0	2		0	2		1	0	0	1	3
1130-1230	1		0	0	1						0	1		0	1		6	0	0	6	8
1230-1330	0		0	0	0						0	3		0	3		1	1	0	2	5
1500-1600	0		0	0	0						0	0		0	0		5	4	0	9	9
1600-1700	5		0	0	5						0	0		0	0		3	0	0	3	8
1700-1800	0		0	0	0						0	0		0	0		0	0	0	0	0
Totals	7		0	0	7						0	6		0	6		17	5	0	22	35

Comments:

School buses comprise 16.67% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 17 & 18. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Bank Street. At 17h57, a driver turned left from the access to Bank Street northbound. ALL PEAK HOUR VOLUMES REFER ONLY TO TRAFFIC TO AND FROM THE WALKLEY CENTRE PLAZA ACCESS.

Turning Movement Count
Pedestrian Crossings Summary
and Flow Diagram

Bank Street & Walkley Centre Access — Ottawa, ON



Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 17

Note
The values in the summary table below and the flow diagram represent the number of pedestrian crossings NOT the number of individual pedestrians crossing. For example, some pedestrians will cross one approach, then another to reach their destination. Accordingly, one pedestrian crossing two approaches will be recorded as two crossings.

Time Period	West Side Crossing Walkley Centre	East Side Crossing N/A	Street Total	South Side Crossing Bank St.	North Side Crossing Bank St.	Street Total	Grand Total
0700-0800	13		13	0	1	1	14
0800-0900	10		10	0	4	4	14
0900-1000	15		15	1	7	8	23
1130-1230	41		41	0	13	13	54
1230-1330	29		29	1	15	16	45
1500-1600	32		32	0	7	7	39
1600-1700	41		41	0	4	4	45
1700-1800	37		37	2	5	7	44
Totals	218		218	4	56	60	278

Comments:
School buses comprise 16.67% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 17 & 18. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Bank Street. At 17h57, a driver turned left from the access to Bank Street northbound. ALL PEAK HOUR VOLUMES REFER ONLY TO TRAFFIC TO AND FROM THE WALKLEY CENTRE PLAZA ACCESS.

Appendix C

Synchro Intersection Worksheets – Existing Conditions

CGH TRANSPORTATION

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	652	3	12	619	33	129
Future Volume (vph)	652	3	12	619	33	129
Satd. Flow (prot)	3240	0	881	3316	1551	1388
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3240	0	870	3316	1533	1369
Satd. Flow (RTOR)						
Lane Group Flow (vph)	727	0	13	688	37	143
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Detector Phase	2		1	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0
Minimum Split (s)	27.9		11.2	28.0	29.9	29.9
Total Split (s)	63.8		11.2	75.0	45.0	45.0
Total Split (%)	53.2%		9.3%	62.5%	37.5%	37.5%
Yellow Time (s)	3.3		3.3	3.3	3.3	3.3
All-Red Time (s)	2.6		2.9	2.7	2.6	2.6
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9		6.2	6.0	5.9	5.9
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max		None	C-Max	None	None
Act Effct Green (s)	83.9		7.5	90.1	18.0	18.0
Actuated g/C Ratio	0.70		0.06	0.75	0.15	0.15
v/c Ratio	0.32		0.24	0.28	0.16	0.70
Control Delay	9.4		60.8	3.4	43.4	65.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	9.4		60.8	3.4	43.4	65.5
LOS	A		E	A	D	E
Approach Delay	9.4			4.5	60.9	
Approach LOS	A			A	E	
Queue Length 50th (m)	24.8		3.1	18.7	7.7	32.3
Queue Length 95th (m)	63.5		m7.7	34.2	16.4	50.7
Internal Link Dist (m)	141.8			170.7	154.0	
Turn Bay Length (m)			37.0			
Base Capacity (vph)	2265		55	2490	505	446
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.32		0.24	0.28	0.07	0.32

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70
Intersection Signal Delay: 13.0 Intersection LOS: B
Intersection Capacity Utilization 37.4% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Airport Parkway & Walkley Road

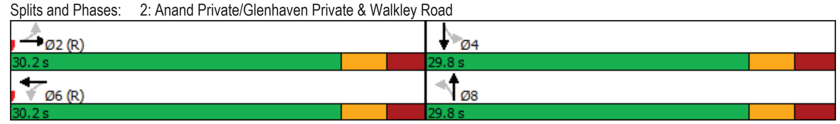
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	861	28	43	699	7	42	0	61	28	3	25
Future Volume (vph)	26	861	28	43	699	7	42	0	61	28	3	25
Satd. Flow (prot)	1658	3263	0	1610	3276	0	1658	1449	0	1658	1456	0
Flt Permitted	0.348			0.265			0.737			0.713		
Satd. Flow (perm)	602	3263	0	447	3276	0	1276	1449	0	1242	1456	0
Satd. Flow (RTOR)		6			2			58			28	
Lane Group Flow (vph)	29	988	0	48	785	0	47	68	0	31	31	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	30.2	30.2		30.2	30.2		29.3	29.3		29.3	29.3	
Total Split (s)	30.2	30.2		30.2	30.2		29.8	29.8		29.8	29.8	
Total Split (%)	50.3%	50.3%		50.3%	50.3%		49.7%	49.7%		49.7%	49.7%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	39.4	39.4		39.4	39.4		12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.21	0.21		0.21	0.21	
v/c Ratio	0.07	0.46		0.16	0.36		0.18	0.19		0.12	0.09	
Control Delay	5.6	7.4		9.8	8.0		19.1	7.7		18.0	7.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.6	7.4		9.8	8.0		19.1	7.7		18.0	7.9	
LOS	A	A		A	A		B	A		B	A	
Approach Delay		7.3			8.1			12.3			12.9	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	1.9	44.6		2.6	22.3		4.6	1.0		3.0	0.3	
Queue Length 95th (m)	4.2	42.3		m5.2	46.1		8.8	6.9		6.5	4.4	
Internal Link Dist (m)		170.7			127.7			97.3			50.6	
Turn Bay Length (m)	60.0			35.0			20.0			20.0		
Base Capacity (vph)	395	2144		293	2152		499	602		486	587	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.07	0.46		0.16	0.36		0.09	0.11		0.06	0.05	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 56 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46
Intersection Signal Delay: 8.1 — Intersection LOS: A
Intersection Capacity Utilization 59.8% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Anand Private/Glenhaven Private & Walkley Road



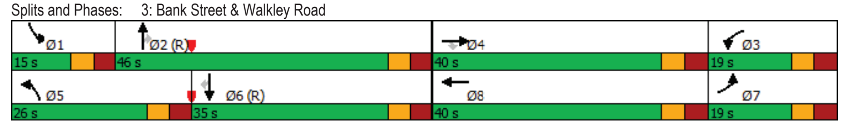
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	407	156	102	362	265	154	1106	181	143	501	262
Future Volume (vph)	389	407	156	102	362	265	154	1106	181	143	501	262
Satd. Flow (prot)	3083	3316	1483	3083	2990	0	1605	4612	1414	3144	3252	1436
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3060	3316	1417	2997	2990	0	1591	4612	1383	3135	3252	1392
Satd. Flow (RTOR)			209						201			
Lane Group Flow (vph)	432	452	173	113	696	0	171	1229	201	159	557	291
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.8	39.7	39.7	11.8	39.7		11.4	34.4	34.4	11.4	34.4	34.4
Total Split (s)	19.0	40.0	40.0	19.0	40.0		26.0	46.0	46.0	15.0	35.0	35.0
Total Split (%)	15.8%	33.3%	33.3%	15.8%	33.3%		21.7%	38.3%	38.3%	12.5%	29.2%	29.2%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.5	3.4	3.4	3.5	3.4		3.1	3.1	3.1	3.1	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	6.7	6.7	6.8	6.7		6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	14.0	27.0	27.0	18.5	31.5		16.7	39.7	39.7	8.5	31.5	31.5
Actuated g/C Ratio	0.12	0.22	0.22	0.15	0.26		0.14	0.33	0.33	0.07	0.26	0.26
v/c Ratio	1.20	0.61	0.36	0.24	0.89		0.76	0.81	0.34	0.71	0.65	0.80
Control Delay	159.2	36.1	6.7	48.9	56.8		71.2	41.7	5.6	66.7	47.9	61.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	159.2	36.1	6.7	48.9	56.8		71.2	41.7	5.6	66.7	47.9	61.8
LOS	F	D	A	D	E		E	D	A	E	D	E
Approach Delay		81.6			55.7			40.3			54.9	
Approach LOS		F			E			D			D	
Queue Length 50th (m)	~71.5	37.5	1.6	12.9	81.4		38.8	96.4	0.0	20.8	67.4	68.9
Queue Length 95th (m)	#104.5	46.8	18.8	22.1	#106.9		61.9	114.6	16.0	#34.4	77.3	#111.6
Internal Link Dist (m)		127.7			170.3			197.6			88.8	
Turn Bay Length (m)	65.0		35.0	85.0			70.0		95.0	110.0		
Base Capacity (vph)	360	920	544	476	829		262	1523	592	225	852	364
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.20	0.49	0.32	0.24	0.84		0.65	0.81	0.34	0.71	0.65	0.80

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 79 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.20
Intersection Signal Delay: 56.1 Intersection LOS: E
Intersection Capacity Utilization 89.5% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Bank Street & Walkley Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	639	44	21	747	33	21
Future Volume (vph)	639	44	21	747	33	21
Satd. Flow (prot)	3210	0	0	3240	1392	0
Flt Permitted				0.926	0.970	
Satd. Flow (perm)	3210	0	0	3003	1390	0
Satd. Flow (RTOR)	15				23	
Lane Group Flow (vph)	759	0	0	853	60	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	28.6		21.6	21.6	27.8	
Total Split (s)	41.0		41.0	41.0	29.0	
Total Split (%)	58.6%		58.6%	58.6%	41.4%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.3		2.3	2.3	2.5	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.6			5.6	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	55.6			55.6	9.9	
Actuated g/C Ratio	0.79			0.79	0.14	
v/c Ratio	0.30			0.36	0.28	
Control Delay	4.9			5.4	19.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.9			5.4	19.6	
LOS	A			A	B	
Approach Delay	4.9			5.4	19.6	
Approach LOS	A			A	B	
Queue Length 50th (m)	13.6			16.9	4.6	
Queue Length 95th (m)	41.8			51.3	10.9	
Internal Link Dist (m)	170.3			200.7	124.8	
Turn Bay Length (m)						
Base Capacity (vph)	2551			2383	476	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.30			0.36	0.13	

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 48 (69%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.36
Intersection Signal Delay: 5.7 Intersection LOS: A
Intersection Capacity Utilization 55.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Banff Avenue & Walkley Road

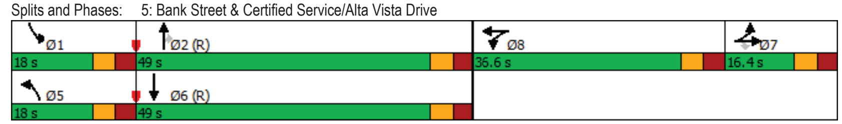
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	3	354	2	27	56	803	482	31	600	6
Future Volume (vph)	5	2	3	354	2	27	56	803	482	31	600	6
Satd. Flow (prot)	0	1644	1450	1525	1538	0	1621	3149	1455	1559	3214	0
Flt Permitted		0.964		0.950	0.959		0.950			0.950		
Satd. Flow (perm)	0	1637	1427	1523	1536	0	1605	3149	1411	1555	3214	0
Satd. Flow (RTOR)									536			
Lane Group Flow (vph)	0	8	3	216	209	0	62	892	536	34	674	0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7						2			
Detector Phase	7	7	7	8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	16.4	16.4	16.4	36.5	36.5		11.3	36.2	36.2	11.3	36.2	
Total Split (s)	16.4	16.4	16.4	36.6	36.6		18.0	49.0	49.0	18.0	49.0	
Total Split (%)	13.7%	13.7%	13.7%	30.5%	30.5%		15.0%	40.8%	40.8%	15.0%	40.8%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.1	3.1	3.1	3.2	3.2		3.0	2.9	2.9	3.0	2.9	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.4	6.4	6.5	6.5		6.3	6.2	6.2	6.3	6.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		10.0	10.0	22.2	22.2		9.5	69.1	69.1	8.1	65.2	
Actuated g/C Ratio		0.08	0.08	0.18	0.18		0.08	0.58	0.58	0.07	0.54	
v/c Ratio		0.06	0.03	0.77	0.74		0.48	0.49	0.52	0.32	0.39	
Control Delay		51.9	51.3	63.6	60.9		62.4	10.7	1.8	60.6	20.8	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		51.9	51.3	63.6	60.9		62.4	10.7	1.8	60.6	20.8	
LOS		D	D	E	E		E	B	A	E	C	
Approach Delay		51.7			62.3			9.6			22.7	
Approach LOS		D			E			A			C	
Queue Length 50th (m)		1.8	0.7	51.3	49.3		15.3	20.4	0.0	7.8	42.7	
Queue Length 95th (m)		6.7	3.8	73.4	70.9		m16.3	m64.6	m20.6	17.9	86.7	
Internal Link Dist (m)		44.0			409.1			131.2			263.2	
Turn Bay Length (m)				70.0			55.0			45.0		
Base Capacity (vph)		137	118	382	385		158	1813	1039	152	1746	
Starvation Cap Reductn		0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0	
Storage Cap Reductn		0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio		0.06	0.03	0.57	0.54		0.39	0.49	0.52	0.22	0.39	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 80 (67%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77
Intersection Signal Delay: 21.8 Intersection LOS: C
Intersection Capacity Utilization 64.5% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Bank Street & Certified Service/Alta Vista Drive



Intersection						
Int Delay, s/veh	0.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	1760	906	30
Future Vol, veh/h	0	13	0	1760	906	30
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	8	2	3	3	2
Mvmt Flow	0	14	0	1956	1007	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	530	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.26	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.98	-	-	-	-
Pot Cap-1 Maneuver	0	410	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	407	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

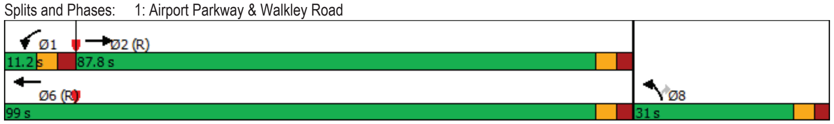
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	407	-	-
HCM Lane V/C Ratio	-	0.035	-	-
HCM Control Delay (s)	-	14.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	609	5	5	1025	28	120
Future Volume (vph)	609	5	5	1025	28	120
Satd. Flow (prot)	3252	0	846	3316	1580	1414
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3252	0	839	3316	1544	1390
Satd. Flow (RTOR)	1					
Lane Group Flow (vph)	683	0	6	1139	31	133
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Detector Phase	2		1	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		5.0	10.0	5.0	5.0
Minimum Split (s)	27.9		11.2	28.0	29.9	29.9
Total Split (s)	87.8		11.2	99.0	31.0	31.0
Total Split (%)	67.5%		8.6%	76.2%	23.8%	23.8%
Maximum Green (s)	81.9		5.0	93.0	25.1	25.1
Yellow Time (s)	3.3		3.3	3.3	3.3	3.3
All-Red Time (s)	2.6		2.9	2.7	2.6	2.6
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9		6.2	6.0	5.9	5.9
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	8.0			8.0	7.0	7.0
Flash Dont Walk (s)	14.0			14.0	17.0	17.0
Pedestrian Calls (#/hr)	7			0	8	8
Act Effct Green (s)	98.2		6.0	100.5	17.6	17.6
Actuated g/C Ratio	0.76		0.05	0.77	0.14	0.14
v/c Ratio	0.28		0.15	0.44	0.14	0.71
Control Delay	6.2		90.2	1.2	48.4	72.7
Queue Delay	0.0		0.0	0.1	0.0	0.0
Total Delay	6.2		90.2	1.3	48.4	72.7
LOS	A		F	A	D	E
Approach Delay	6.2			1.8	68.1	
Approach LOS	A			A	E	
Queue Length 50th (m)	22.5		1.6	7.5	7.1	33.0
Queue Length 95th (m)	51.0		m3.2	10.9	15.6	51.9
Internal Link Dist (m)	194.8			122.0	89.1	
Turn Bay Length (m)			37.0			
Base Capacity (vph)	2457		39	2562	305	268
Starvation Cap Reductn	0		0	350	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.28		0.15	0.51	0.10	0.50

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 18 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 8.8	Intersection LOS: A
Intersection Capacity Utilization 45.5%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 1: Airport Parkway & Walkley Road



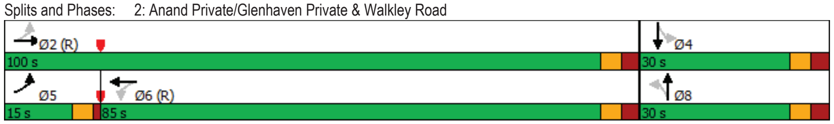
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	786	46	85	1200	21	53	3	62	84	4	36
Future Volume (vph)	22	786	46	85	1200	21	53	3	62	84	4	36
Satd. Flow (prot)	1658	3241	0	1658	3296	0	1658	1470	0	1658	1463	0
Flt Permitted	0.151			0.309			0.728			0.710		
Satd. Flow (perm)	264	3241	0	527	3296	0	1248	1470	0	1235	1463	0
Satd. Flow (RTOR)		12			2			69			40	
Lane Group Flow (vph)	24	924	0	94	1356	0	59	72	0	93	44	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	9.3	30.2		30.2	30.2		29.3	29.3		29.3	29.3	
Total Split (s)	15.0	100.0		85.0	85.0		30.0	30.0		30.0	30.0	
Total Split (%)	11.5%	76.9%		65.4%	65.4%		23.1%	23.1%		23.1%	23.1%	
Maximum Green (s)	10.7	93.8		78.8	78.8		23.7	23.7		23.7	23.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	2.9		2.9	2.9		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	6.2		6.2	6.2		6.3	6.3		6.3	6.3	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		17.0		17.0	17.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		29		57	57		22	22		24	24	
Act Effct Green (s)	101.1	99.2		92.9	92.9		18.3	18.3		18.3	18.3	
Actuated g/C Ratio	0.78	0.76		0.71	0.71		0.14	0.14		0.14	0.14	
v/c Ratio	0.09	0.37		0.25	0.58		0.34	0.27		0.54	0.18	
Control Delay	4.1	4.9		10.2	12.9		53.7	13.8		62.1	17.1	
Queue Delay	0.0	0.1		0.0	3.2		0.0	0.0		0.0	0.0	
Total Delay	4.1	5.0		10.2	16.1		53.7	13.8		62.1	17.1	
LOS	A	A		B	B		D	B		E	B	
Approach Delay		5.0			15.7			31.8			47.6	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	1.4	34.1		10.7	109.6		13.2	0.6		21.5	0.9	
Queue Length 95th (m)	m2.7	39.2		m8.5	m88.5		26.5	13.8		38.6	11.3	
Internal Link Dist (m)		122.0			128.8			102.0			72.2	
Turn Bay Length (m)	60.0			35.0			20.0			20.0		
Base Capacity (vph)	320	2477		376	2356		227	324		225	299	
Starvation Cap Reductn	0	581		0	871		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.07	0.49		0.25	0.91		0.26	0.22		0.41	0.15	

Intersection Summary

2: Anand Private/Glenhaven Private & Walkley Road

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 18 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 14.4 Intersection LOS: B
Intersection Capacity Utilization 67.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Anand Private/Glenhaven Private & Walkley Road



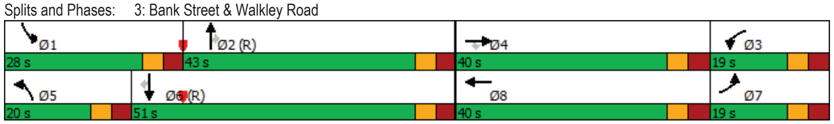
3: Bank Street & Walkley Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	324	399	216	247	595	218	181	766	195	263	987	574
Future Volume (vph)	324	399	216	247	595	218	181	766	195	263	987	574
Satd. Flow (prot)	3144	3221	1483	3144	3138	0	1621	4657	1483	3144	3316	1450
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3109	3221	1397	3020	3138	0	1598	4657	1434	3115	3316	1337
Satd. Flow (RTOR)									217			
Lane Group Flow (vph)	360	443	240	274	903	0	201	851	217	292	1097	638
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	39.7	39.7	12.2	39.7		11.4	36.4	36.4	11.9	36.4	36.4
Total Split (s)	19.0	40.0	40.0	19.0	40.0		20.0	43.0	43.0	28.0	51.0	51.0
Total Split (%)	14.6%	30.8%	30.8%	14.6%	30.8%		15.4%	33.1%	33.1%	21.5%	39.2%	39.2%
Maximum Green (s)	12.2	33.3	33.3	12.2	33.3		13.6	36.6	36.6	21.6	44.6	44.6
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.5	3.4	3.4	3.5	3.4		3.1	3.1	3.1	3.1	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	6.7	6.7	6.8	6.7		6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			8.0	8.0		8.0	8.0
Flash Dont Walk (s)		26.0	26.0		26.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		37	37		33			13	13		46	46
Act Effct Green (s)	12.2	30.0	30.0	15.5	33.3		13.6	41.0	41.0	17.2	44.6	44.6
Actuated g/C Ratio	0.09	0.23	0.23	0.12	0.26		0.10	0.32	0.32	0.13	0.34	0.34
v/c Ratio	1.22	0.60	0.75	0.73	1.12		1.19	0.58	0.36	0.70	0.96	1.39
Control Delay	170.9	39.1	51.4	68.6	115.9		178.3	39.8	6.3	69.0	59.5	221.7
Queue Delay	0.0	0.0	0.0	0.0	1.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	170.9	39.1	51.4	68.6	116.9		178.3	39.8	6.3	69.0	59.5	221.8
LOS	F	D	D	E	F		F	D	A	E	E	F
Approach Delay		87.4			105.6			56.0			112.0	
Approach LOS		F			F			E			F	
Queue Length 50th (m)	~59.1	54.8	58.2	36.4	~140.3		~61.9	66.9	0.0	40.5	120.7	~215.1
Queue Length 95th (m)	#90.4	52.9	69.8	#62.4	#180.6		#110.3	85.4	18.7	m53.8	#186.9	#287.5
Internal Link Dist (m)		128.8			170.1			224.9			92.2	
Turn Bay Length (m)	65.0		35.0	85.0			70.0		95.0	110.0		
Base Capacity (vph)	295	825	357	374	803		169	1468	600	522	1137	458
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	117		0	0	0	0	0	2
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.54	0.67	0.73	1.32		1.19	0.58	0.36	0.56	0.96	1.40

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.39
Intersection Signal Delay: 93.1 Intersection LOS: F
Intersection Capacity Utilization 97.9% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Bank Street & Walkley Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	781	62	13	1007	29	28
Future Volume (vph)	781	62	13	1007	29	28
Satd. Flow (prot)	3237	0	0	3310	1522	0
Flt Permitted				0.940	0.975	
Satd. Flow (perm)	3237	0	0	3114	1519	0
Satd. Flow (RTOR)	17				31	
Lane Group Flow (vph)	937	0	0	1133	63	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	28.6		21.6	21.6	27.8	
Total Split (s)	52.0		52.0	52.0	28.0	
Total Split (%)	65.0%		65.0%	65.0%	35.0%	
Maximum Green (s)	46.4		46.4	46.4	22.2	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.3		2.3	2.3	2.5	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.6			5.6	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	12.0				7.0	
Flash Dont Walk (s)	9.0				15.0	
Pedestrian Calls (#/hr)	16				16	
Act Effct Green (s)	62.2			62.2	9.8	
Actuated g/C Ratio	0.78			0.78	0.12	
v/c Ratio	0.37			0.47	0.30	
Control Delay	5.0			5.9	20.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.0			5.9	20.6	
LOS	A			A	C	
Approach Delay	5.0			5.9	20.6	
Approach LOS	A			A	C	
Queue Length 50th (m)	17.9			24.7	4.6	
Queue Length 95th (m)	53.1			72.8	12.4	
Internal Link Dist (m)	170.1			200.8	184.0	
Turn Bay Length (m)						
Base Capacity (vph)	2520			2421	444	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.37			0.47	0.14	

Intersection Summary

Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 69 (86%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Banff Avenue & Walkley Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	2	17	442	0	55	74	907	319	89	1096	3
Future Volume (vph)	7	2	17	442	0	55	74	907	319	89	1096	3
Satd. Flow (prot)	0	1641	1450	1540	1537	0	1621	3241	1469	1605	3315	0
Flt Permitted		0.962		0.950	0.963		0.950			0.950		
Satd. Flow (perm)	0	1629	1377	1536	1533	0	1603	3241	1301	1568	3315	0
Satd. Flow (RTOR)									342			
Lane Group Flow (vph)	0	10	19	280	272	0	82	1008	354	99	1221	0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7						2			
Detector Phase	7	7	7	8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	16.4	16.4	16.4	36.5	36.5		11.3	39.6	39.6	12.1	39.6	
Total Split (s)	16.4	16.4	16.4	36.6	36.6		18.0	59.0	59.0	18.0	59.0	
Total Split (%)	12.6%	12.6%	12.6%	28.2%	28.2%		13.8%	45.4%	45.4%	13.8%	45.4%	
Maximum Green (s)	10.0	10.0	10.0	30.1	30.1		11.7	52.8	52.8	11.7	52.8	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.1	3.1	3.1	3.2	3.2		3.0	2.9	2.9	3.0	2.9	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.4	6.4	6.5	6.5		6.3	6.2	6.2	6.3	6.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)				12.0	12.0			16.0	16.0		16.0	
Flash Dont Walk (s)				18.0	18.0			14.0	14.0		14.0	
Pedestrian Calls (#/hr)				10	10			43	43		28	
Act Effct Green (s)		10.0	10.0	27.1	27.1		10.5	62.9	62.9	11.2	63.6	
Actuated g/C Ratio		0.08	0.08	0.21	0.21		0.08	0.48	0.48	0.09	0.49	
v/c Ratio		0.08	0.18	0.87	0.85		0.63	0.64	0.44	0.72	0.75	
Control Delay		57.4	60.6	76.0	73.1		64.9	17.3	2.7	85.7	33.3	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		57.4	60.6	76.0	73.1		64.9	17.3	2.7	85.7	33.3	
LOS		E	E	E	E		E	B	A	F	C	
Approach Delay		59.5			74.6			16.4			37.3	
Approach LOS		E			E			B			D	
Queue Length 50th (m)		2.4	4.6	72.0	69.4		17.5	68.9	14.5	24.9	151.8	
Queue Length 95th (m)		8.1	12.8	#114.7	#109.8		m24.1	m78.7	m18.3	#50.5	#195.4	
Internal Link Dist (m)		44.0			409.1			127.9			281.0	
Turn Bay Length (m)				70.0			55.0			45.0		
Base Capacity (vph)		126	105	356	355		146	1568	805	146	1621	
Starvation Cap Reductn		0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0	
Storage Cap Reductn		0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio		0.08	0.18	0.79	0.77		0.56	0.64	0.44	0.68	0.75	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 104 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 73.9% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Bank Street & Alta Vista Drive

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	34	0	1308	1824	61
Future Vol, veh/h	0	34	0	1308	1824	61
Conflicting Peds, #/hr	0	0	35	0	0	35
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	38	0	1453	2027	68

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1083	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	183	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	178	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	178	-	-
HCM Lane V/C Ratio	-	0.212	-	-
HCM Control Delay (s)	-	30.6	-	-
HCM Lane LOS	-	D	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-

Appendix D

Collision Data

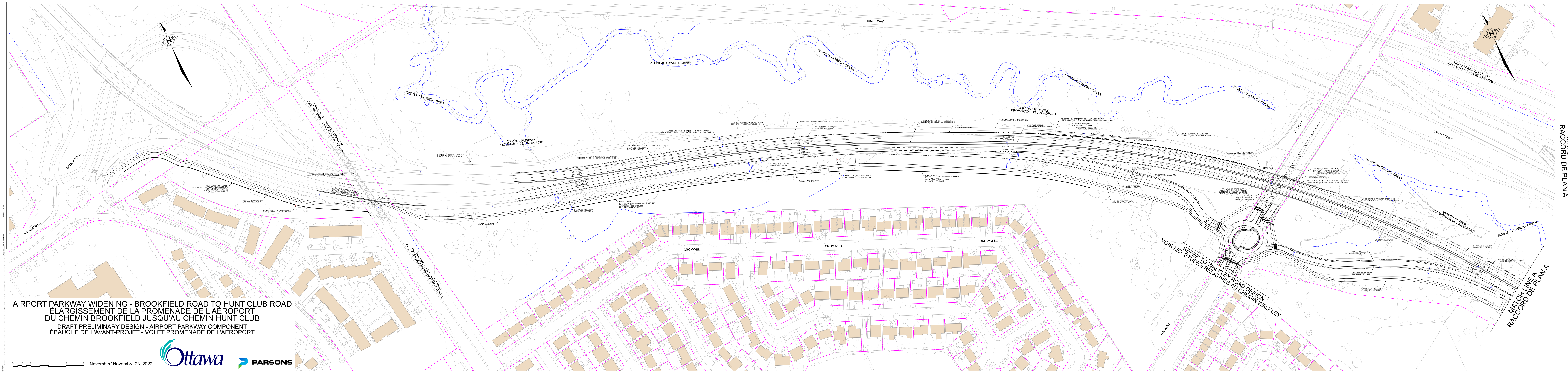
CGH TRANSPORTATION

Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition	# Vehicles	# Motorcycles	# Bicycles	# Pedestrians
1/10/2018	2018	13:28	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
2/3/2018	2018	18:44	BANK ST @ WALKLEY RD (0011423)	03 - Snow	07 - Dark	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	02 - Wet	0	0	0	0
2/22/2018	2018	8:49	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
6/6/2018	2018	21:49	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
6/16/2018	2018	12:06	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
6/20/2018	2018	20:23	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
7/18/2018	2018	16:29	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
7/25/2018	2018	14:40	BANK ST @ WALKLEY RD (0011423)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
7/30/2018	2018	15:40	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
7/31/2018	2018	13:19	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
8/4/2018	2018	13:47	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
8/8/2018	2018	11:19	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	06 - SMV unattended vehicle	01 - Dry	0	0	0	0
8/26/2018	2018	22:37	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
9/13/2018	2018	19:08	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
10/14/2018	2018	13:38	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
10/17/2018	2018	17:05	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement	01 - Dry	0	0	0	0
10/31/2018	2018	17:06	BANK ST @ WALKLEY RD (0011423)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
11/16/2018	2018	15:13	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	03 - Loose snow	0	0	0	0
11/20/2018	2018	13:45	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	03 - Loose snow	0	0	0	0
11/21/2018	2018	13:45	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	02 - Wet	0	0	0	0
12/5/2018	2018	13:01	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement	02 - Wet	0	0	0	0
12/5/2018	2018	17:30	BANK ST @ WALKLEY RD (0011423)	03 - Snow	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	03 - Loose snow	0	0	0	0
12/20/2018	2018	16:29	BANK ST @ WALKLEY RD (0011423)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
12/27/2018	2018	15:15	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
12/29/2018	2018	10:59	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
1/2/2019	2019	8:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	01 - Approaching	06 - Ice	0	0	0	0
1/3/2019	2019	20:00	BANK ST @ WALKLEY RD (0011423)	02 - Rain	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
1/6/2019	2019	2:52	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	07 - SMV other	02 - Wet	0	0	0	0
1/19/2019	2019	17:30	BANK ST @ WALKLEY RD (0011423)	03 - Snow	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	03 - Loose snow	0	0	0	0
1/24/2019	2019	17:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	04 - Slush	0	0	0	0
1/28/2019	2019	15:25	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
2/5/2019	2019	15:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2/14/2019	2019	16:00	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
2/22/2019	2019	10:36	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
4/2/2019	2019	8:45	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
4/8/2019	2019	16:20	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
5/6/2019	2019	21:59	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	99 - Other	01 - Dry	0	0	0	0
6/6/2019	2019	11:35	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
6/20/2019	2019	18:10	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
6/23/2019	2019	21:06	BANK ST @ WALKLEY RD (0011423)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
6/30/2019	2019	23:20	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
7/22/2019	2019	16:10	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
7/25/2019	2019	20:05	BANK ST @ WALKLEY RD (0011423)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
8/8/2019	2019	13:59	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
9/21/2019	2019	17:16	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
9/25/2019	2019	15:00	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
9/29/2019	2019	12:13	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
11/28/2019	2019	11:28	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
11/30/2019	2019	20:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
12/12/2019	2019	17:52	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
12/13/2019	2019	21:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
12/27/2019	2019	10:05	BANK ST @ WALKLEY RD (0011423)	04 - Freezing Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	06 - Ice	0	0	0	0
12/27/2019	2019	10:54	BANK ST @ WALKLEY RD (0011423)	04 - Freezing Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	06 - Ice	0	0	0	0
12/29/2019	2019	19:30	BANK ST @ WALKLEY RD (0011423)	04 - Freezing Rain	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	06 - Ice	0	0	0	0
1/16/2020	2020	11:22	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
1/27/2020	2020	11:20	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	06 - SMV unattended vehicle	02 - Wet	0	0	0	0
2/24/2020	2020	20:00	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2/27/2020	2020	15:10	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	03 - Loose snow	0	0	0	0
2/27/2020	2020	13:15	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	07 - SMV other	05 - Packed snow	0	0	0	0
2/29/2020	2020	22:12	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	02 - Angle	03 - Loose snow	0	0	0	0
3/11/2020	2020	8:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
5/25/2020	2020	17:40	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	02 - Angle	01 - Dry	0	0	1	0
7/2/2020	2020	17:03	BANK ST @ WALKLEY RD (0011423)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
7/13/2020	2020	10:54	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
7/17/2020	2020	19:40	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	02 - Angle	01 - Dry	0	0	1	0
8/5/2020	2020	16:50	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
8/8/2020	2020	11:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
8/20/2020	2020	19:22	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
10/15/2020	2020	17:08	BANK ST @ WALKLEY RD (0011423)	02 - Rain	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
10/23/2020	2020	11:38	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
10/29/2020	2020	12:29	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
10/31/2020	2020	12:17	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
11/6/2020	2020	8:43	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	99 - Other	01 - Dry	0	0	0	0
11/28/2020	2020	5:25	BANK ST @ WALKLEY RD (0011423)	02 - Rain	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
11/29/2020	2020	0:18	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
12/7/2020	2020	9:40	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
12/9/2020	2020	7:45	BANK ST @ WALKLEY RD (0011423)	03 - Snow	03 - Dawn	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	03 - Loose snow	0	0	0	0
12/22/2020	2020	17:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
1/4/2021	2021	8:47	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	06 - Ice	0	0	0	0
1/27/2021	2021	6:45	BANK ST @ WALKLEY RD (0011423)	03 - Snow	07 - Dark	01 - Traffic signal	0	03 - P.D. only	02 - Angle	03 - Loose snow	0	0	0	0
2/26/2021	2021	14:22	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
3/3/2021	2021	23:08	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
3/3/2021	2021	22:53	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
3/26/2021	2021	13:25	BANK ST @ WALKLEY RD (0011423)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	02 - Wet	0	0	0	0
4/25/2021	2021	18:22	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
5/6/2021	2021	19:00	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
5/23/2021	2021	15:54	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
6/10/2021	2021	11:00	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
6/19/2021	2021	14:02	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
6/23/2021	2021	19:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
7/30/2021	2021	12:50	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
7/30/2021	2021	15:17	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement	01 - Dry	0	0	0	0
8/5/2021	2021	19:30	BANK ST @ WALKLEY RD (0011423)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
8/14/2021	2021	18:40	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
8/21/2021	2021	20:45	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	02 - Non-fatal injury	02 - Angle	01 - Dry	0	0	1	0
9/10/2021	2021	14:27	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
9/23/2021	2021	16:57	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement	01 - Dry	0	0	0	0
9/24/2021	2021	16:15	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
9/26/2021	2021	13:43	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
9/26/2021	2021	14:38	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
10/8/2021	2021	17:00	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
11/2/2021	2021	14:15	BANK ST @ WALKLEY RD (0011423)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
11/5/2021	2021	14:25	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
12/12/2021	2021	16:00	BANK ST @ WALKLEY RD (0011423)	01 - Clear	05 - Dusk	01 - Traffic signal	0	03 - P.D. only	02 - Angle	02 - Wet	0	0	0	0
12/22/2021	2021	17:22	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
12/23/2021	2021	18:47	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
1/5/2022	2022	18:00	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
1/12/2022	2022	8:27	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	03 - Loose snow	0	0	0	0

2/3/2022	2022	20:28	BANK ST @ WALKLEY RD (0011423)	03 - Snow	07 - Dark	01 - Traffic signal	0	02 - Non-fatal injury	07 - SMV other	06 - Ice	0	0	0	0
2/8/2022	2022	13:13	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2/8/2022	2022	19:04	BANK ST @ WALKLEY RD (0011423)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	05 - Packed snow	0	0	0	0
2/15/2022	2022	10:50	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	02 - Wet	0	0	0	0
2/18/2022	2022	9:02	BANK ST @ WALKLEY RD (0011423)	03 - Snow	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	03 - Loose snow	0	0	0	0
2/18/2022	2022	11:40	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	03 - Loose snow	0	0	0	0
3/3/2022	2022	11:26	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
5/6/2022	2022	10:26	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
10/31/2022	2022	14:15	BANK ST @ WALKLEY RD (0011423)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
11/6/2018	2018	13:45	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	02 - Rain	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
11/30/2018	2018	11:47	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	99 - Other	01 - Daylight	10 - No control	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
12/1/2018	2018	17:50	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	07 - Dark	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
12/8/2018	2018	14:58	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2/14/2019	2019	15:30	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	99 - Other	02 - Wet	0	0	0	0
4/9/2019	2019	13:56	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	03 - Snow	01 - Daylight	10 - No control	0	03 - P.D. only	02 - Angle	02 - Wet	0	0	0	0
5/7/2019	2019	12:52	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	02 - Non-fatal injury	02 - Angle	01 - Dry	0	0	1	0
11/25/2019	2019	13:57	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
1/20/2020	2020	10:46	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
3/9/2020	2020	21:45	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	02 - Rain	07 - Dark	10 - No control	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
5/4/2020	2020	17:56	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	07 - SMV other	01 - Dry	0	0	0	0
6/5/2020	2020	18:15	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
9/16/2020	2020	13:49	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
5/12/2021	2021	15:04	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
5/28/2021	2021	14:30	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
7/7/2021	2021	16:12	BANK ST btwn ALTA VISTA DR & WALKLEY RD (__3ZA4TX)	01 - Clear	01 - Daylight	10 - No control	0	02 - Non-fatal injury	05 - Turning movement	01 - Dry	0	0	1	0
2/6/2018	2018	7:35	WALKLEY RD @ GLENHAVEN PRIV (0011424)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	05 - Packed snow	0	0	0	0
2/22/2018	2018	15:01	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
3/10/2018	2018	14:27	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement	02 - Wet	0	0	0	0
3/15/2018	2018	17:48	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
4/9/2018	2018	17:06	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
6/5/2018	2018	12:52	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
6/6/2018	2018	12:59	WALKLEY RD @ GLENHAVEN PRIV (0011424)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
8/26/2018	2018	20:43	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	07 - Dark	01 - Traffic signal	0	02 - Non-fatal injury	05 - Turning movement	01 - Dry	0	0	0	0
10/22/2018	2018	15:00	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	07 - SMV other	01 - Dry	0	0	0	2
11/11/2018	2018	17:34	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
11/22/2018	2018	11:00	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
3/20/2019	2019	11:51	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
5/14/2019	2019	8:10	WALKLEY RD @ GLENHAVEN PRIV (0011424)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
6/5/2019	2019	18:15	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
7/18/2019	2019	11:23	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
11/12/2019	2019	11:07	WALKLEY RD @ GLENHAVEN PRIV (0011424)	03 - Snow	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	02 - Angle	04 - Slush	0	0	0	0
1/6/2020	2020	11:17	WALKLEY RD @ GLENHAVEN PRIV (0011424)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	04 - Slush	0	0	0	0
2/19/2020	2020	11:49	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
1/5/2021	2021	13:57	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	02 - Angle	02 - Wet	0	0	0	0
4/18/2021	2021	15:53	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
4/19/2021	2021	9:58	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
11/2/2021	2021	19:07	WALKLEY RD @ GLENHAVEN PRIV (0011424)	02 - Rain	07 - Dark	01 - Traffic signal	0	03 - P.D. only	02 - Angle	02 - Wet	0	0	0	0
1/16/2022	2022	17:50	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	99 - Other	01 - Dry	0	0	0	0
2/15/2022	2022	6:45	WALKLEY RD @ GLENHAVEN PRIV (0011424)	03 - Snow	03 - Dawn	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	03 - Loose snow	0	0	0	0
9/16/2022	2022	7:55	WALKLEY RD @ GLENHAVEN PRIV (0011424)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2/13/2019	2019	18:30	WALKLEY RD btwn BANK ST & GLENHAVEN PRIV (__3ZA373)	03 - Snow	07 - Dark	10 - No control	0	03 - P.D. only	03 - Rear end	05 - Packed snow	0	0	0	0
8/7/2021	2021	11:50	WALKLEY RD btwn BANK ST & GLENHAVEN PRIV (__3ZA373)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
11/16/2021	2021	16:45	WALKLEY RD btwn BANK ST & GLENHAVEN PRIV (__3ZA373)	01 - Clear	05 - Dusk	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
1/9/2022	2022	10:43	WALKLEY RD btwn BANK ST & GLENHAVEN PRIV (__3ZA373)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
2/15/2022	2022	6:50	WALKLEY RD btwn BANK ST & GLENHAVEN PRIV (__3ZA373)	03 - Snow	03 - Dawn	10 - No control	0	03 - P.D. only	03 - Rear end	04 - Slush	0	0	0	0
2/7/2018	2018	9:30	ALTA VISTA DR @ BANK ST (0011318)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	03 - Loose snow	0	0	0	0
5/11/2018	2018	9:02	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
5/26/2018	2018	9:48	ALTA VISTA DR @ BANK ST (0011318)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	02 - Wet	0	0	0	0
6/29/2018	2018	7:19	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
9/4/2018	2018	16:23	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
10/13/2018	2018	15:21	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
12/3/2018	2018	18:59	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
1/9/2019	2019	19:30	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
1/17/2019	2019	15:27	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
4/8/2019	2019	13:15	ALTA VISTA DR @ BANK ST (0011318)	02 - Rain	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	02 - Wet	0	0	0	0
5/28/2019	2019	10:51	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
8/14/2019	2019	14:05	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
9/8/2019	2019	9:50	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
9/19/2019	2019	11:30	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	1	0	0
9/19/2019	2019	15:37	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
1/31/2020	2020	20:46	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	07 - Dark	01 - Traffic signal	0	02 - Non-fatal injury	07 - SMV other	01 - Dry	0	0	0	0
2/27/2020	2020	11:00	ALTA VISTA DR @ BANK ST (0011318)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	05 - Packed snow	0	0	0	0
9/6/2020	2020	1:00	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
10/11/2020	2020	11:50	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
10/18/2020	2020	19:00	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
1/8/2021	2021	10:07	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
3/4/2021	2021	16:40	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
8/4/2021	2021	13:28	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
8/11/2021	2021	17:16	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	07 - SMV other	01 - Dry	0	0	0	0
10/10/2021	2021	16:36	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
11/8/2021	2021	13:16	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
11/22/2021	2021	12:00	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
12/14/2021	2021	22:31	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	07 - Dark	01 - Traffic signal	0	02 - Non-fatal injury	04 - Sideswipe	01 - Dry	0	0	1	0
3/28/2022	2022	10:13	ALTA VISTA DR @ BANK ST (0011318)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	04 - Sideswipe	01 - Dry	0	0	0	0
5/30/2018	2018	15:48	AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD (0011348)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
5/1/2019	2019	13:22	AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD (0011348)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	02 - Angle	01 - Dry	0	0	1	0
1/11/2020	2020	19:14	AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD (0011348)	02 - Rain	07 - Dark	01 - Traffic signal	0	03 - P.D. only	04 - Sideswipe	02 - Wet	0	0	0	0
5/24/2020	2020	19:05	AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD (0011348)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	99 - Other	01 - Dry	0	0	0	0
8/31/2021	2021	15:42	AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD (0011348)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0
10/15/2021	2021	17:20	AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD (0011348)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
11/11/2021	2021	18:40	AIRPORT PKWY/WALKLEY RD NB OFF RAMP @ WALKLEY RD (0011348)	01 - Clear	07 - Dark	01 - Traffic signal	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
8/6/2018	2018	20:53	WALKLEY RD btwn GLENHAVEN PRIV & TRANSIT (__45CW09)	02 - Rain	07 - Dark	10 - No control	0	02 - Non-fatal injury	03 - Rear end	02 - Wet	0	0	0	0
7/20/2021	2021	14:37	WALKLEY RD btwn GLENHAVEN PRIV & TRANSIT (__45CW09)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0

Appendix E

Draft preliminary design of Airport Parkway Widening



AIRPORT PARKWAY WIDENING - BROOKFIELD ROAD TO HUNT CLUB ROAD
ÉLARGISSEMENT DE LA PROMENADE DE L'AÉROPORT
DU CHEMIN BROOKFIELD JUSQU'AU CHEMIN HUNT CLUB

DRAFT PRELIMINARY DESIGN - AIRPORT PARKWAY COMPONENT
ÉBAUCHE DE L'AVANT-PROJET - VOLET PROMENADE DE L'AÉROPORT

November/ Novembre 23, 2022

AIRPORT PARKWAY WIDENING - BROOKFIELD ROAD TO HUNT CLUB ROAD
ÉLARGISSEMENT DE LA PROMENADE DE L'AÉROPORT
DU CHEMIN BROOKFIELD JUSQU'AU CHEMIN HUNT CLUB

DRAFT PRELIMINARY DESIGN - AIRPORT PARKWAY COMPONENT
ÉBAUCHE DE L'AVANT-PROJET - VOLET PROMENADE DE L'AÉROPORT

November/ Novembre 23, 2022

AIRPORT PARKWAY WIDENING - BROOKFIELD ROAD TO HUNT CLUB ROAD
ÉLARGISSEMENT DE LA PROMENADE DE L'AÉROPORT
DU CHEMIN BROOKFIELD JUSQU'AU CHEMIN HUNT CLUB

DRAFT PRELIMINARY DESIGN - WALKLEY ROAD AND ROUNDABOUT COMPONENT
ÉBAUCHE DE L'AVANT-PROJECT - VOLET DU CHEMIN WALKLEY ET DU CARREFOUR GIRATOIRE

November/ Novembre 23, 2022

Ottawa

PARSONS

Appendix F

Functional Design Plan of Bank Street Renewal

BANK STREET RENEWAL FUNCTIONAL DESIGN STUDY - Between Riverside Drive North and Ledbury Avenue
L'ÉTUDE DE CONCEPTION FONCTIONELLE EN VUE DE LA RÉFECTION DE LA RUE BANK - de la Promenade Riverside Nord à l'avenue Ledbury

PROPOSED RIGHT-OF-WAY CROSS-SECTION WITH DIMENSIONS
VUE TRANSVERSALE DE L'EMPRISE PROPOSÉE ET DIMENSIONS

PROPOSED STREETSCAPE DESIGN - Ground level view
AMÉNAGEMENT PAYSAGER DE RUE PROPOSÉ - Vue au niveau de la rue

PROPOSED RIGHT-OF-WAY CROSS-SECTION WITH DIMENSIONS
VUE TRANSVERSALE DE L'EMPRISE PROPOSÉE ET DIMENSIONS

PROPOSED STREETSCAPE DESIGN - Ground level view
AMÉNAGEMENT PAYSAGER DE RUE PROPOSÉ - Vue au niveau de la rue

PROPOSED STREETSCAPE DESIGN - Bird's eye view
AMÉNAGEMENT PAYSAGER DE RUE PROPOSÉ - Vue à vol d'oiseau

PROPOSED STREETSCAPE DESIGN - Ground level view
AMÉNAGEMENT PAYSAGER DE RUE PROPOSÉ - Vue au niveau de la rue

Appendix G

Turning Movement Count Data – Existing Accesses

Turning Movement Count
Summary Report Including Peak Hours, AADT and Expansion Factors
All Vehicles Except Bicycles

Glenhaven Private & Walkley Centre/Westvalley Private — **Ottawa, ON**

Survey Date: Wednesday, November 15, 2023 — **Start Time:** 0700 — **AADT Factor:** 0.9
Weather AM: Mostly Cloudy +2º C — **Survey Duration:** 8 Hrs. — **Survey Hours:** 0700-1000, 1130-1330 & 1500-1800
Weather PM: Mostly Cloudy +8º C — **Surveyor(s):** T. Carmody

	Westvalley Pvt. Eastbound					Walkley Centre Westbound						Glenhaven Pvt. Northbound					Glenhaven Pvt. Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	0	0	5	0	5	15	0	0	0	15	20	0	2	4	0	6	0	14	0	0	14	20	40
0800-0900	0	0	15	0	15	20	0	0	0	20	35	1	10	21	1	33	0	20	0	0	20	53	88
0900-1000	0	0	8	0	8	25	1	1	0	27	35	8	8	15	2	33	0	14	0	0	14	47	82
1130-1230	0	0	6	0	6	93	0	1	0	94	100	9	12	17	2	40	0	14	0	0	14	54	154
1230-1330	1	0	8	0	9	104	1	1	0	106	115	8	10	27	0	45	1	22	0	0	23	68	183
1500-1600	1	0	6	0	7	99	1	1	0	101	108	11	10	20	1	42	0	13	0	0	13	55	163
1600-1700	0	0	16	0	16	93	0	3	0	96	112	16	14	16	1	47	0	23	0	0	23	70	182
1700-1800	0	1	5	0	6	76	0	3	0	79	85	11	16	23	3	53	0	16	0	0	16	69	154
Totals	2	1	69	0	72	525	3	10	0	538	610	64	82	143	10	299	1	136	0	0	137	436	1046

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard <u>weekday</u> 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Equ. 12 Hr	3	1	96	0	100	730	4	14	0	748	848	89	114	199	14	416	1	189	0	0	190	606	1454

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

AADT 12-hr	3	1	86	0	90	657	4	13	0	673	763	80	103	179	13	374	1	170	0	0	171	545	1309

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

AADT 24 Hr	3	2	113	0	118	860	5	16	0	882	1000	105	134	234	16	490	2	223	0	0	225	715	1714

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡ 0.96												Highest Hourly Vehicle Volume Between 0700h & 1000h											
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0815-0915	0	0	16	0	16	24	0	1	0	25	41	4	9	21	0	34	0	21	0	0	21	55	96
OFF Peak Hour Factor ➡ 0.76												Highest Hourly Vehicle Volume Between 1130h & 1330h											
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1230-1330	1	0	8	0	9	104	1	1	0	106	115	8	10	27	0	45	1	22	0	0	23	68	183
PM Peak Hour Factor ➡ 0.81												Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1545-1645	0	0	13	0	13	104	1	2	0	107	120	13	13	20	2	48	0	22	0	0	22	70	190

Comments:

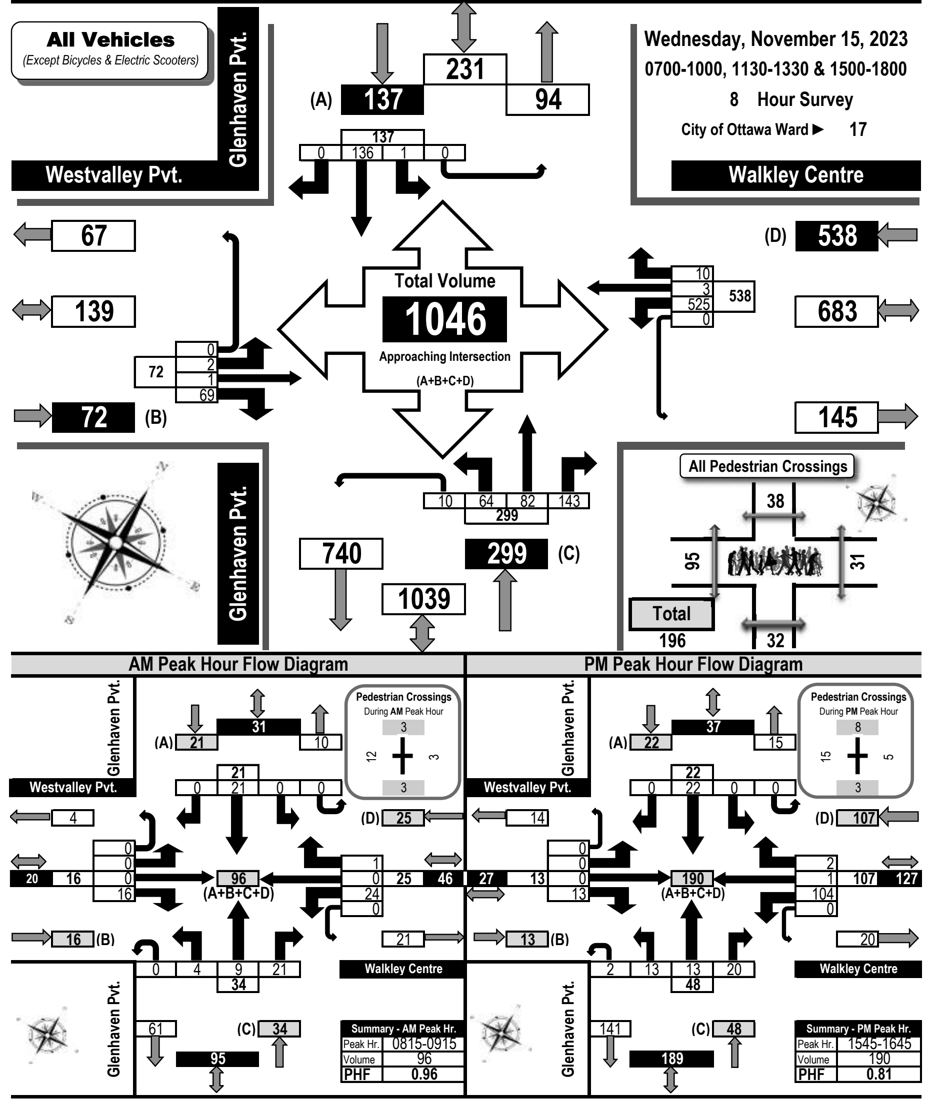
School buses comprise 41.67% of the heavy vehicle traffic.

Notes:

1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

Glenhaven Private & Walkley Centre/Westvalley Private — **Ottawa, ON**

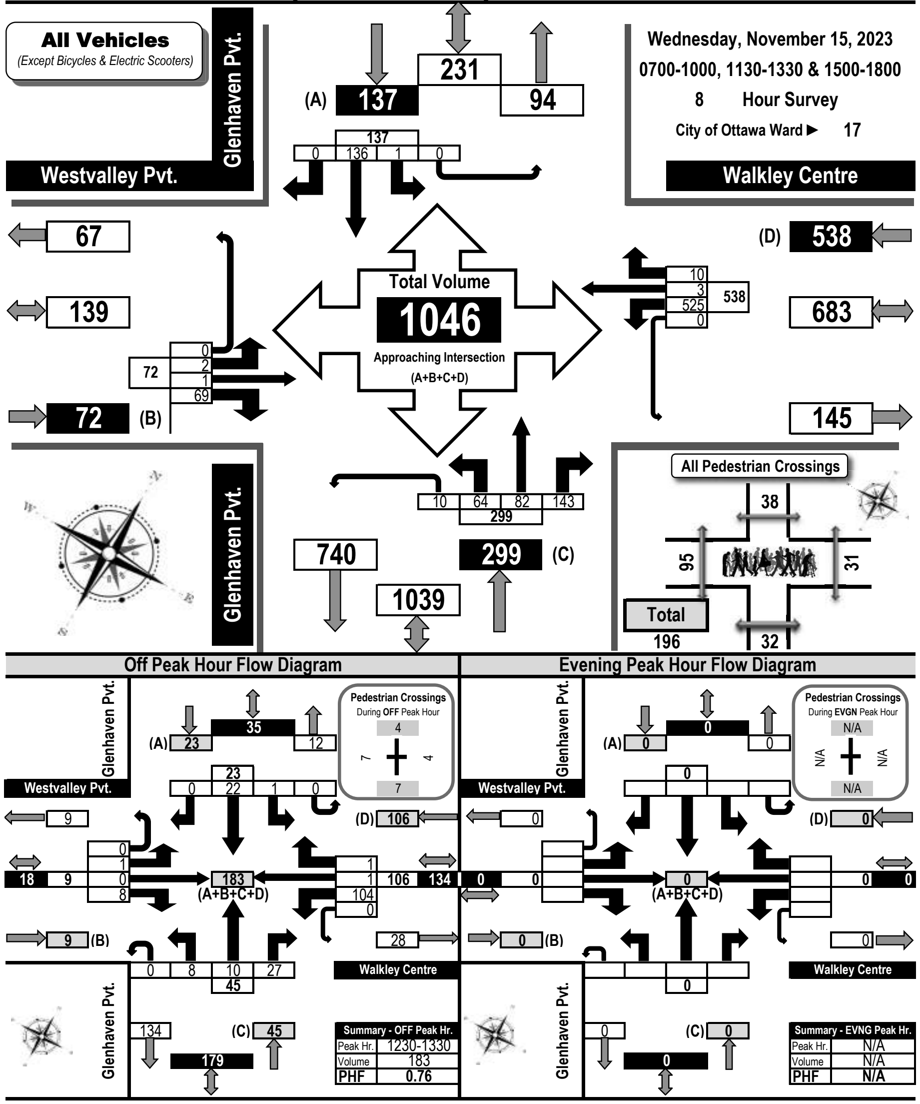


Turning Movement Count

Summary, OFF and EVENING Peak Hour Flow Diagrams

All Vehicles Except Bicycles

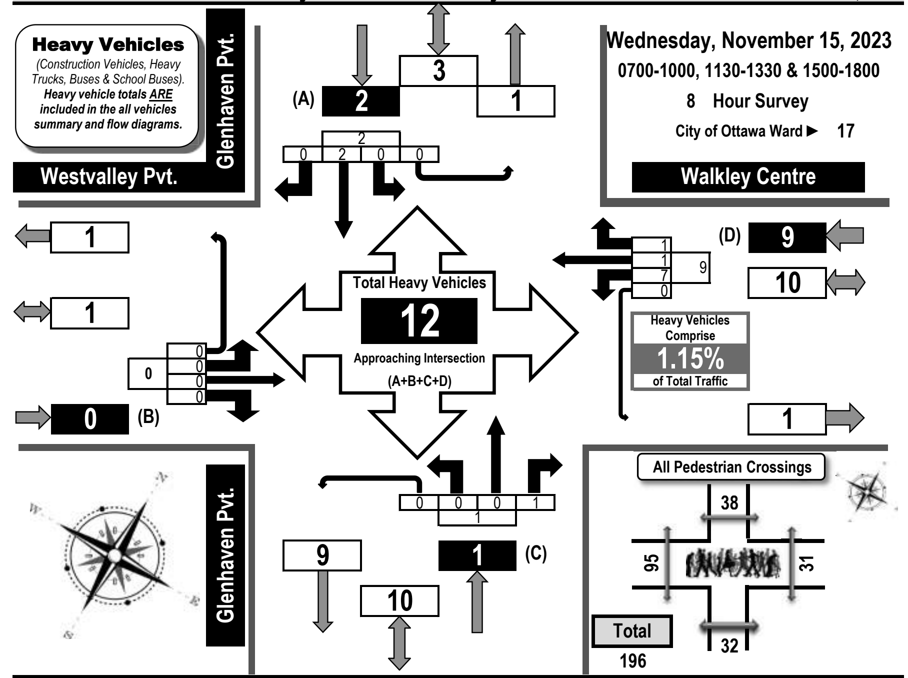
Glenhaven Private & Walkley Centre/Westvalley Private Ottawa, ON



Turning Movement Count

Heavy Vehicle Summary (FHWA Class 4-13) Flow Diagram

Glenhaven Private & Walkley Centre/Westvalley Private Ottawa, ON



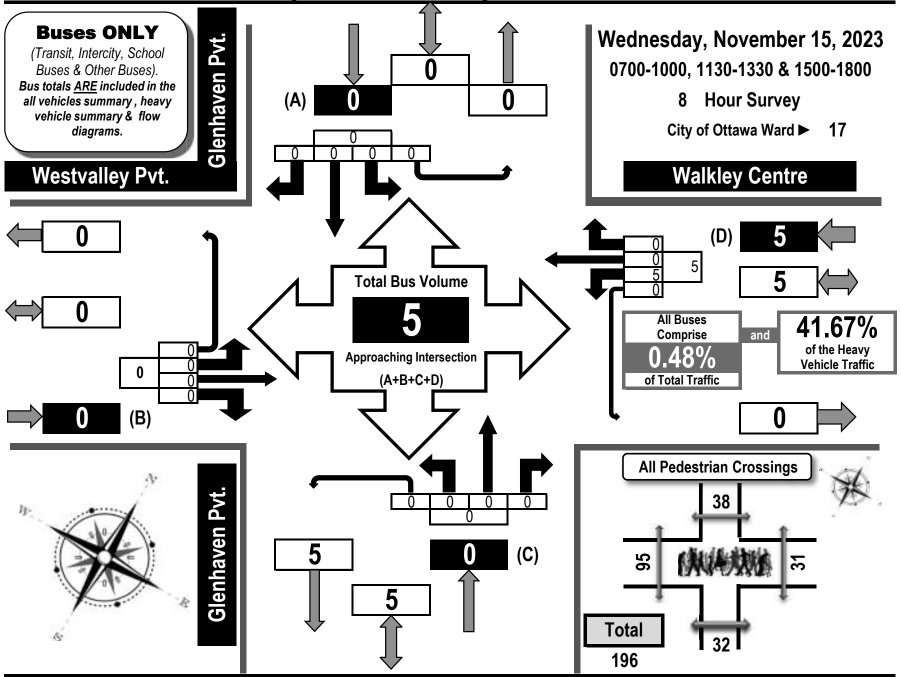
	Westvalley Pvt. Eastbound					Walkley Centre Westbound					Glenhaven Pvt. Northbound					Glenhaven Pvt. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
0800-0900	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0900-1000	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1130-1230	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1230-1330	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	0	2	0	0	2	5
1500-1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-1700	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
1700-1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	0	0	7	1	1	0	9	0	0	1	0	1	0	2	0	0	2	12

Comments:

School buses comprise 41.67% of the heavy vehicle traffic.

Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram

Glenhaven Private & Walkley Centre/Westvalley Private Ottawa, ON



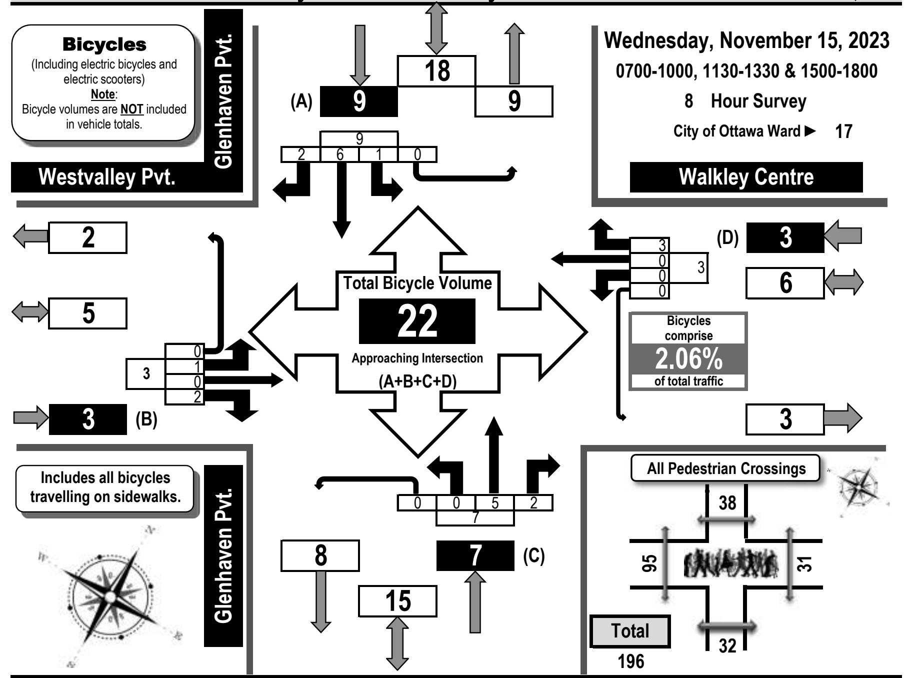
	Westvalley Pvt.					Walkley Centre					Glenhaven Pvt.					Glenhaven Pvt.					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
0800-0900	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0900-1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1130-1230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1230-1330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500-1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-1700	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
1700-1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5

Comments:

School buses comprise 41.67% of the heavy vehicle traffic.

Turning Movement Count
Bicycle Summary
Flow Diagram

Glenhaven Private & Walkley Centre/Westvalley Private Ottawa, ON



	Westvalley Pvt.					Walkley Centre					Glenhaven Pvt.					Glenhaven Pvt.					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	1	0	0	0	1	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	5
0800-0900	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
0900-1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1130-1230	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
1230-1330	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	2
1500-1600	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
1600-1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
1700-1800	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	1	3	1	0	5	8
Totals	1	0	2	0	3	0	0	3	0	3	0	5	2	0	7	1	6	2	0	9	22

Comments:

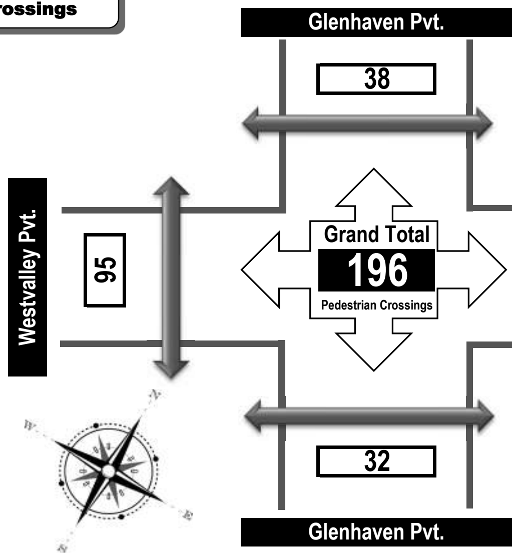
School buses comprise 41.67% of the heavy vehicle traffic.

Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Glenhaven Private & Walkley Centre/Westvalley Private Ottawa, ON

Pedestrian Crossings

Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 17



Note

*The values in the summary table below and the flow diagram represent the number of pedestrian crossings **NOT** the number of individual pedestrians crossing. For example, some pedestrians will cross one approach, then another to reach their destination. Accordingly, one pedestrian crossing two approaches will be recorded as two crossings.*

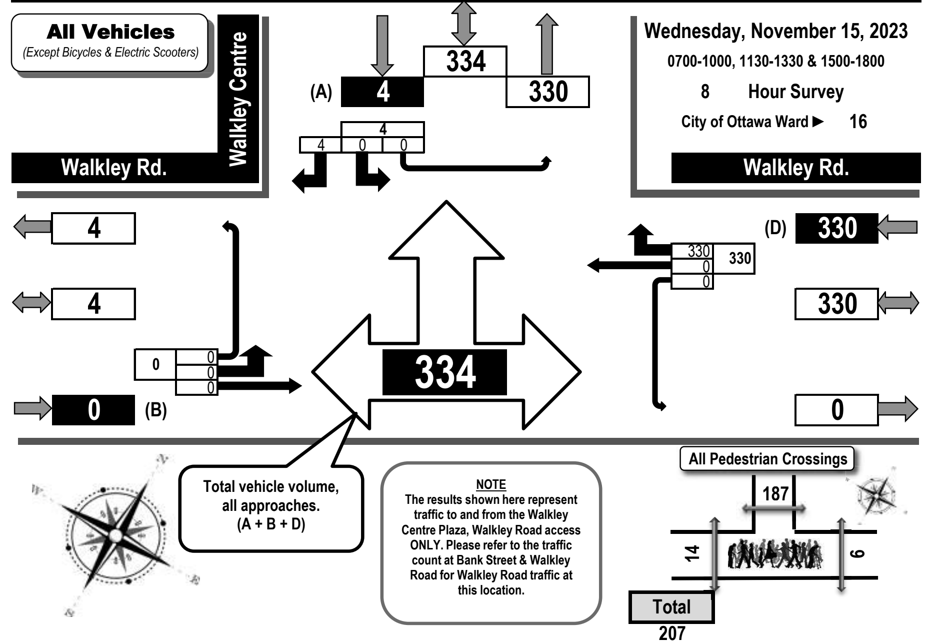
Time Period	West Side Crossing Westvalley Pvt.	East Side Crossing Walkley Centre	Street Total	South Side Crossing Glenhaven Pvt.	North Side Crossing Glenhaven Pvt.	Street Total	Grand Total
0700-0800	14	3	17	3	5	8	25
0800-0900	16	3	19	3	3	6	25
0900-1000	5	2	7	2	1	3	10
1130-1230	11	4	15	5	4	9	24
1230-1330	7	4	11	7	4	11	22
1500-1600	13	8	21	2	4	6	27
1600-1700	14	5	19	3	9	12	31
1700-1800	15	2	17	7	8	15	32
Totals	95	31	126	32	38	70	196

Comments:
School buses comprise 41.67% of the heavy vehicle traffic.

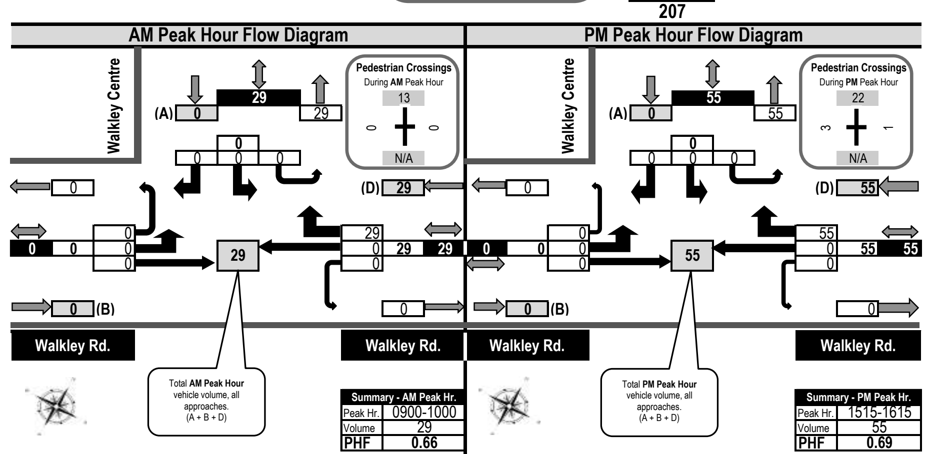
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

Walkley Road & Walkley Centre Access Ottawa, ON

Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 16

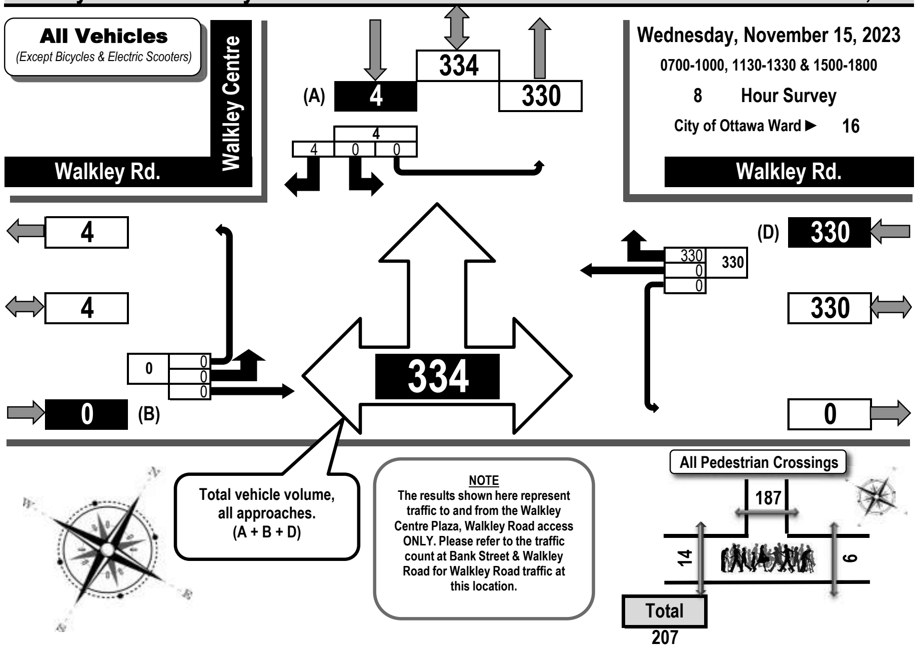


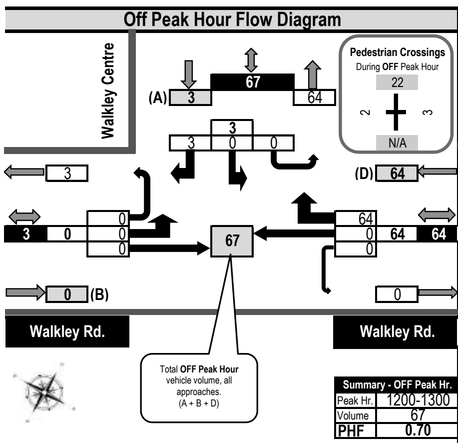
NOTE
The results shown here represent traffic to and from the Walkley Centre Plaza, Walkley Road access ONLY. Please refer to the traffic count at Bank Street & Walkley Road for Walkley Road traffic at this location.

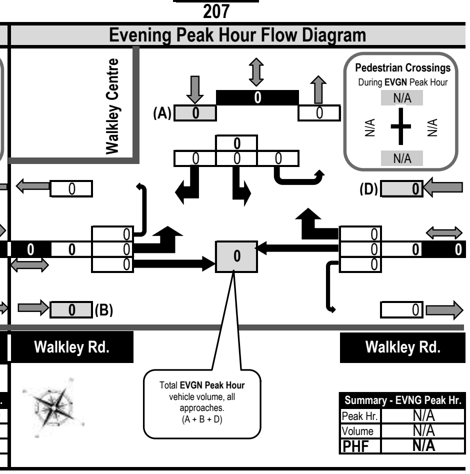


Turning Movement Count
Summary, OFF and EVENING Peak Hour Flow Diagrams
All Vehicles Except Bicycles

Walkley Road & Walkley Centre Access — **Ottawa, ON**







Turning Movement Count
Summary Report Including Peak Hours, AADT and Expansion Factors
All Vehicles Except Bicycles

Walkley Road & Walkley Centre Access — **Ottawa, ON**

Survey Date:	Wednesday, November 15, 2023			**Start Time:** 0700	**AADT Factor:** 0.9
Weather AM:	Mostly Cloudy +2º C	**Survey Duration:**	8 Hrs.	**Survey Hours:**	0700-1000, 1130-1330 & 1500-1800
Weather PM:	Mostly Cloudy +8º C			**Surveyor(s):**	T. Carmody

	Walkley Rd. Eastbound					Walkley Rd. Westbound						N/A Northbound					Walkley Centre Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	0	0		0	0		0	20	0	20	20						0		0	0	0	0	20
0800-0900	0	0		0	0		0	27	0	27	27						0		0	0	0	0	27
0900-1000	0	0		0	0		0	29	0	29	29						0		0	0	0	0	29
1130-1230	0	0		0	0		0	52	0	52	52						0		2	0	2	2	54
1230-1330	0	0		0	0		0	56	0	56	56						0		1	0	1	1	57
1500-1600	0	0		0	0		0	55	0	55	55						0		0	0	0	0	55
1600-1700	0	0		0	0		0	41	0	41	41						0		0	0	0	0	41
1700-1800	0	0		0	0		0	50	0	50	50						0		1	0	1	1	51
Totals	0	0		0	0		0	330	0	330	330						0		4	0	4	4	334

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard <u>weekday</u> 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
Equ. 12 Hr	0	0	0	0	0	0	0	459	0	459	459	0	0	0	0	0	0	0	6	0	6	6	464
AADT 12-hr	0	0	0	0	0	0	0	413	0	413	413	0	0	0	0	0	0	0	5	0	5	5	418
AADT 24 Hr	0	0	0	0	0	0	0	541	0	541	541	0	0	0	0	0	0	0	7	0	7	7	547

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡ 0.66												Highest Hourly Vehicle Volume Between 0700h & 1000h											
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0900-1000	0	0	0	0	0	0	0	29	0	29	29	0	0	0	0	0	0	0	0	0	0	0	29
OFF Peak Hour Factor ➡ 0.70												Highest Hourly Vehicle Volume Between 1130h & 1330h											
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1200-1300	0	0	0	0	0	0	0	64	0	64	64	0	0	0	0	0	0	0	3	0	3	3	67
PM Peak Hour Factor ➡ 0.69												Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1515-1615	0	0	0	0	0	0	0	55	0	55	55	0	0	0	0	0	0	0	0	0	0	0	55

Comments:

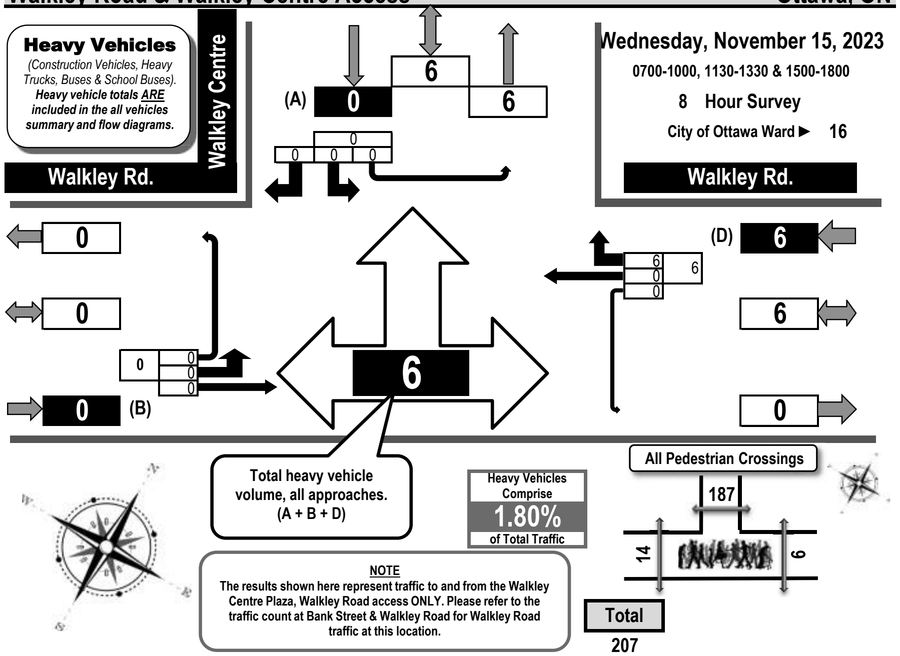
School buses comprise 50.00% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Walkley Road. A total of 4 drivers exited this access, turning right (westbound) on Walkley Road. Bicycles were not counted.

Notes:

1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram

Walkley Road & Walkley Centre Access — Ottawa, ON



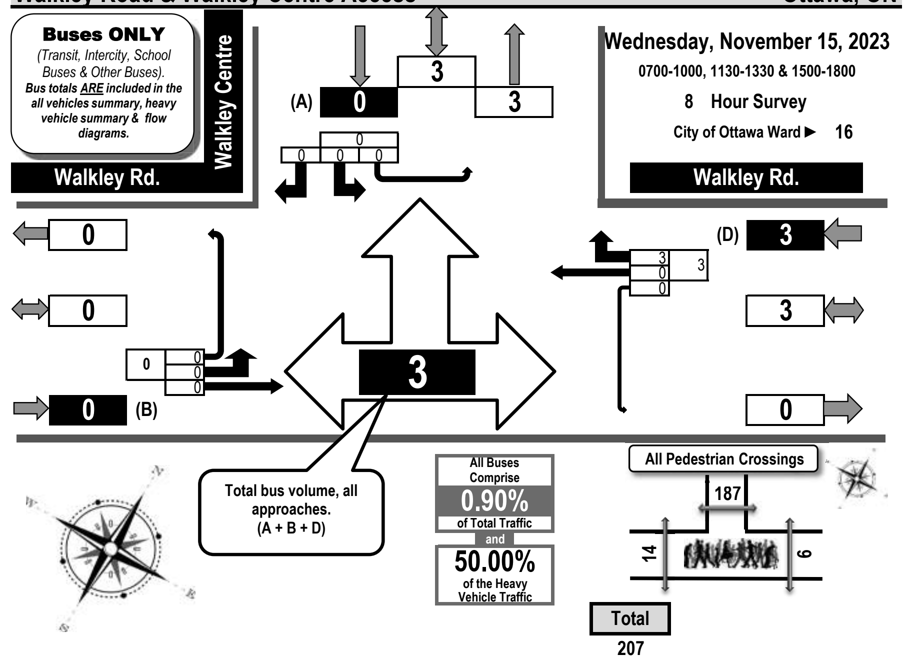
	Walkley Rd. Eastbound					Walkley Rd. Westbound					N/A Northbound					Walkley Centre Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	0		0	0		0	1	0	1						0		0	0	0	1
0800-0900	0	0		0	0		0	2	0	2						0		0	0	0	2
0900-1000	0	0		0	0		0	1	0	1						0		0	0	0	1
1130-1230	0	0		0	0		0	0	0	0						0		0	0	0	0
1230-1330	0	0		0	0		0	1	0	1						0		0	0	0	1
1500-1600	0	0		0	0		0	0	0	0						0		0	0	0	0
1600-1700	0	0		0	0		0	1	0	1						0		0	0	0	1
1700-1800	0	0		0	0		0	0	0	0						0		0	0	0	0
Totals	0	0		0	0		0	6	0	6						0		0	0	0	6

Comments:

School buses comprise 50.00% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Walkley Road. A total of 4 drivers exited this access, turning right (westbound) on Walkley Road. Bicycles were not counted.

Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram

Walkley Road & Walkley Centre Access — Ottawa, ON



	Walkley Rd. Eastbound					Walkley Rd. Westbound					N/A Northbound					Walkley Centre Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	0		0	0		0	1	0	1						0		0	0	0	1
0800-0900	0	0		0	0		0	1	0	1						0		0	0	0	1
0900-1000	0	0		0	0		0	0	0	0						0		0	0	0	0
1130-1230	0	0		0	0		0	0	0	0						0		0	0	0	0
1230-1330	0	0		0	0		0	0	0	0						0		0	0	0	0
1500-1600	0	0		0	0		0	0	0	0						0		0	0	0	0
1600-1700	0	0		0	0		0	1	0	1						0		0	0	0	1
1700-1800	0	0		0	0		0	0	0	0						0		0	0	0	0
Totals	0	0		0	0		0	3	0	3						0		0	0	0	3

Comments:

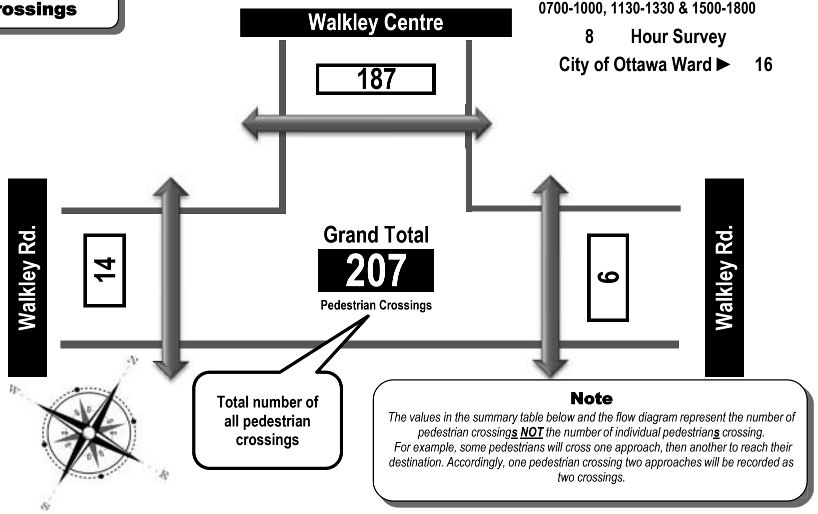
School buses comprise 50.00% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Walkley Road. A total of 4 drivers exited this access, turning right (westbound) on Walkley Road. Bicycles were not counted.

Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Walkley Road & Walkley Centre Access — Ottawa, ON

Pedestrian Crossings

Wednesday, November 15, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 16



Time Period	West Side Crossing Walkley Rd.	East Side Crossing Walkley Rd.	Street Total	South Side Crossing N/A	North Side Crossing Walkley Centre	Street Total	Grand Total
0700-0800	0	0	0		17	17	17
0800-0900	1	0	1		12	12	13
0900-1000	0	0	0		13	13	13
1130-1230	2	1	3		26	26	29
1230-1330	2	3	5		16	16	21
1500-1600	3	0	3		25	25	28
1600-1700	0	1	1		39	39	40
1700-1800	6	1	7		39	39	46
Totals	**14**	**6**	**20**		**187**	**187**	**207**

Comments:
School buses comprise 50.00% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 16 & 17. NOTE: Only turns to and from the Walkley Centre Plaza. Please refer to the full traffic count at Bank Street & Walkley Road for through vehicle traffic on Walkley Road. A total of 4 drivers exited this access, turning right (westbound) on Walkley Road. Bicycles were not counted.

Appendix H

TDM Checklist

TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

TDM-supportive design & infrastructure measures: *Non-residential developments*			Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☐
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

TDM-supportive design & infrastructure measures: *Non-residential developments*			Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

TDM-Supportive Development Design and Infrastructure Checklist: *Residential Developments (multi-family or condominium)*

Legend	
REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☐
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☐
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

		TDM-supportive design & infrastructure measures: ***Residential developments***	**Check if completed & add descriptions, explanations or plan/drawing references**
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: ***Residential developments***	**Check if completed & add descriptions, explanations or plan/drawing references**
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☑
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☑
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

		TDM-supportive design & infrastructure measures: ***Residential developments***	**Check if completed & add descriptions, explanations or plan/drawing references**
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance
★	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: ***Non-residential developments***	**Check if proposed & add descriptions**
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	2.	**WALKING AND CYCLING**	
	2.1	**Information on walking/cycling routes & destinations**	
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances	☑
	2.2	**Bicycle skills training**	
		Commuter travel	
BETTER ★	2.2.1	Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
	2.3	**Valet bike parking**	
		Visitor travel	
BETTER	2.3.1	Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances	☐
BASIC		3.1.2	Provide online links to OC Transpo and STO information	☐
BETTER		3.1.3	Provide real-time arrival information display at entrances	☐
		3.2	**Transit fare incentives**	
			Commuter travel	
BETTER		3.2.1	Offer preloaded PRESTO cards to encourage commuters to use transit	☐
BETTER	★	3.2.2	Subsidize or reimburse monthly transit pass purchases by employees	☐
			Visitor travel	
BETTER		3.2.3	Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐
		3.3	**Enhanced public transit service**	
			Commuter travel	
BETTER		3.3.1	Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.3.2	Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐
		3.4	**Private transit service**	
			Commuter travel	
BETTER		3.4.1	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.4.2	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4.	**RIDESHARING**	
		4.1	**Ridematching service**	
			Commuter travel	
BASIC	★	4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
		4.2	**Carpool parking price incentives**	
			Commuter travel	
BETTER		4.2.1	Provide discounts on parking costs for registered carpools	☐
		4.3	**Vanpool service**	
			Commuter travel	
BETTER		4.3.1	Provide a vanpooling service for long-distance commuters	☐
		5.	**CARSHARING & BIKESHARING**	
		5.1	**Bikeshare stations & memberships**	
BETTER		5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
			Commuter travel	
BETTER		5.1.2	Provide employees with bikeshare memberships for local business travel	☐
		5.2	**Carshare vehicles & memberships**	
			Commuter travel	
BETTER		5.2.1	Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2	Provide employees with carshare memberships for local business travel	☐
		6.	**PARKING**	
		6.1	**Priced parking**	
			Commuter travel	
BASIC	★	6.1.1	Charge for long-term parking (daily, weekly, monthly)	☑
BASIC		6.1.2	Unbundle parking cost from lease rates at multi-tenant sites	☐
			Visitor travel	
BETTER		6.1.3	Charge for short-term parking (hourly)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7.	**TDM MARKETING & COMMUNICATIONS**	
		7.1	**Multimodal travel information**	
			Commuter travel	
BASIC	★	7.1.1	Provide a multimodal travel option information package to new/relocating employees and students	☑
			Visitor travel	
BETTER	★	7.1.2	Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
		7.2	**Personalized trip planning**	
			Commuter travel	
BETTER	★	7.2.1	Offer personalized trip planning to new/relocating employees	☐
		7.3	**Promotions**	
			Commuter travel	
BETTER		7.3.1	Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☐
		8.	**OTHER INCENTIVES & AMENITIES**	
		8.1	**Emergency ride home**	
			Commuter travel	
BETTER	★	8.1.1	Provide emergency ride home service to non-driving commuters	☐
		8.2	**Alternative work arrangements**	
			Commuter travel	
BASIC	★	8.2.1	Encourage flexible work hours	☐
BETTER		8.2.2	Encourage compressed workweeks	☐
BETTER	★	8.2.3	Encourage telework	☐
		8.3	**Local business travel options**	
			Commuter travel	
BASIC	★	8.3.1	Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4	**Commuter incentives**	
			Commuter travel	
BETTER		8.4.1	Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5	**On-site amenities**	
			Commuter travel	
BETTER		8.5.1	Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

Legend

BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance
★	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

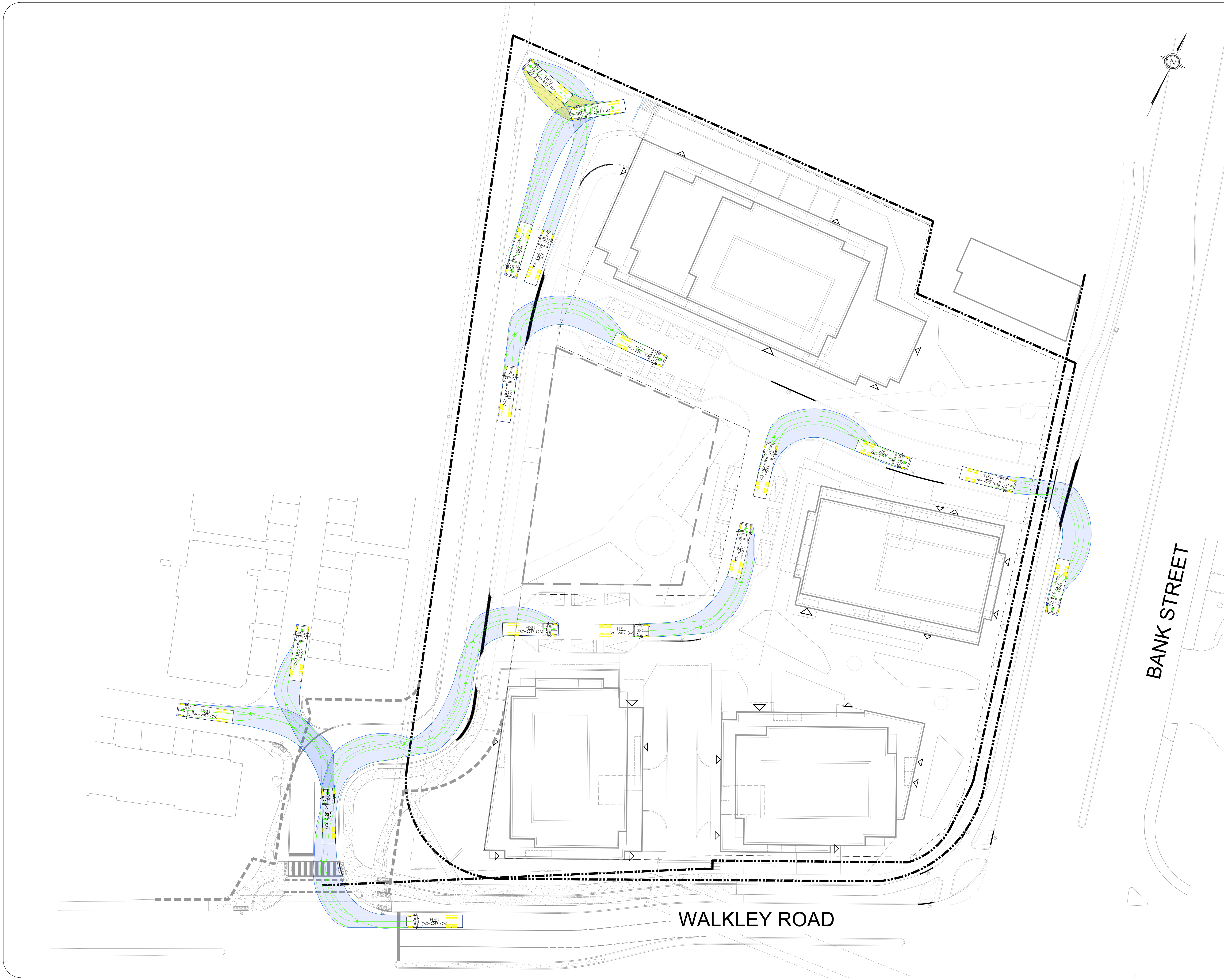
			TDM measures: *Residential developments*	Check if proposed & add descriptions
		1.	**TDM PROGRAM MANAGEMENT**	
		1.1	**Program coordinator**	
BASIC	★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
		1.2	**Travel surveys**	
BETTER		1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2.	**WALKING AND CYCLING**	
		2.1	**Information on walking/cycling routes & destinations**	
BASIC		2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☑
		2.2	**Bicycle skills training**	
BETTER		2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	3.	**TRANSIT**	
	3.1	**Transit information**	
BASIC	3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☑
BETTER	3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐
	3.2	**Transit fare incentives**	
BASIC ★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☑
BETTER	3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☐
	3.3	**Enhanced public transit service**	
BETTER ★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☐
	3.4	**Private transit service**	
BETTER	3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐
	4.	**CARSHARING & BIKESHARING**	
	4.1	**Bikeshare stations & memberships**	
BETTER	4.1.1	Contract with provider to install on-site bikeshare station *(multi-family)*	☐
BETTER	4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
	4.2	**Carshare vehicles & memberships**	
BETTER	4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐
BETTER	4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
	5.	**PARKING**	
	5.1	**Priced parking**	
BASIC ★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☑
BASIC ★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☑

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	6.	**TDM MARKETING & COMMUNICATIONS**	
	6.1	**Multimodal travel information**	
BASIC ★	6.1.1	Provide a multimodal travel option information package to new residents	☑
	6.2	**Personalized trip planning**	
BETTER ★	6.2.1	Offer personalized trip planning to new residents	☐

Appendix I

Turning Templates



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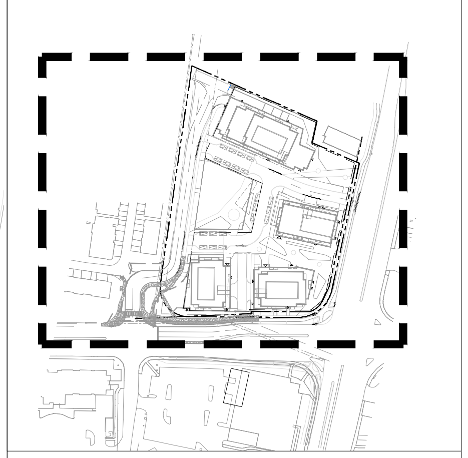
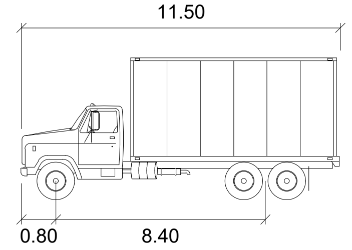




HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

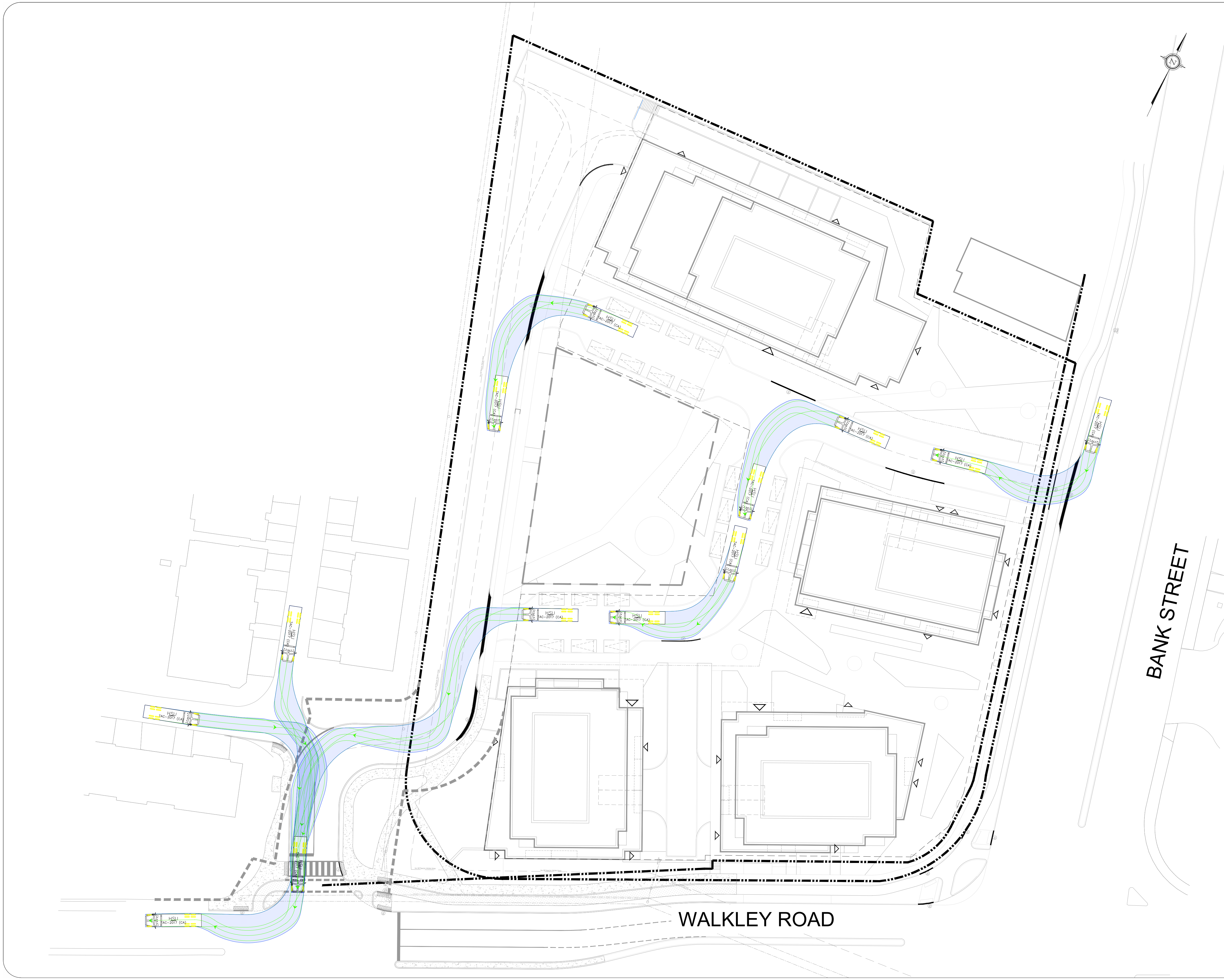
CLIENT: BGO Walkley Centre

ARCHITECT:

SITE: 1822 Bank Street

TITLE: Turning Movement Analysis
HSU Turning Movements (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH
PROJECT NO: 2023-025	DRAWING NO: 001		REVISION: 02



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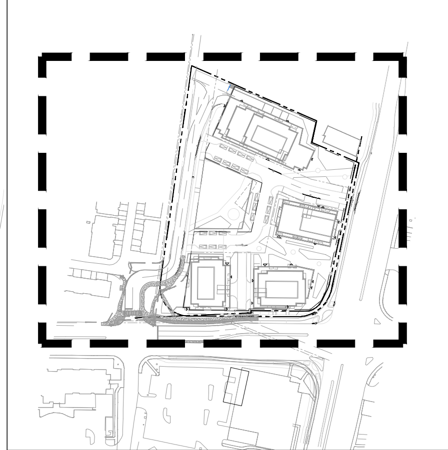
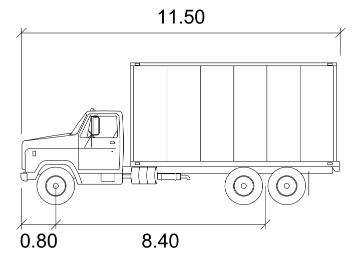




HSU

		meters
Width	:	2.60
Track	:	2.60
Lock to Lock Time	:	6.0
Steering Angle	:	40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: BGO Walkley Centre

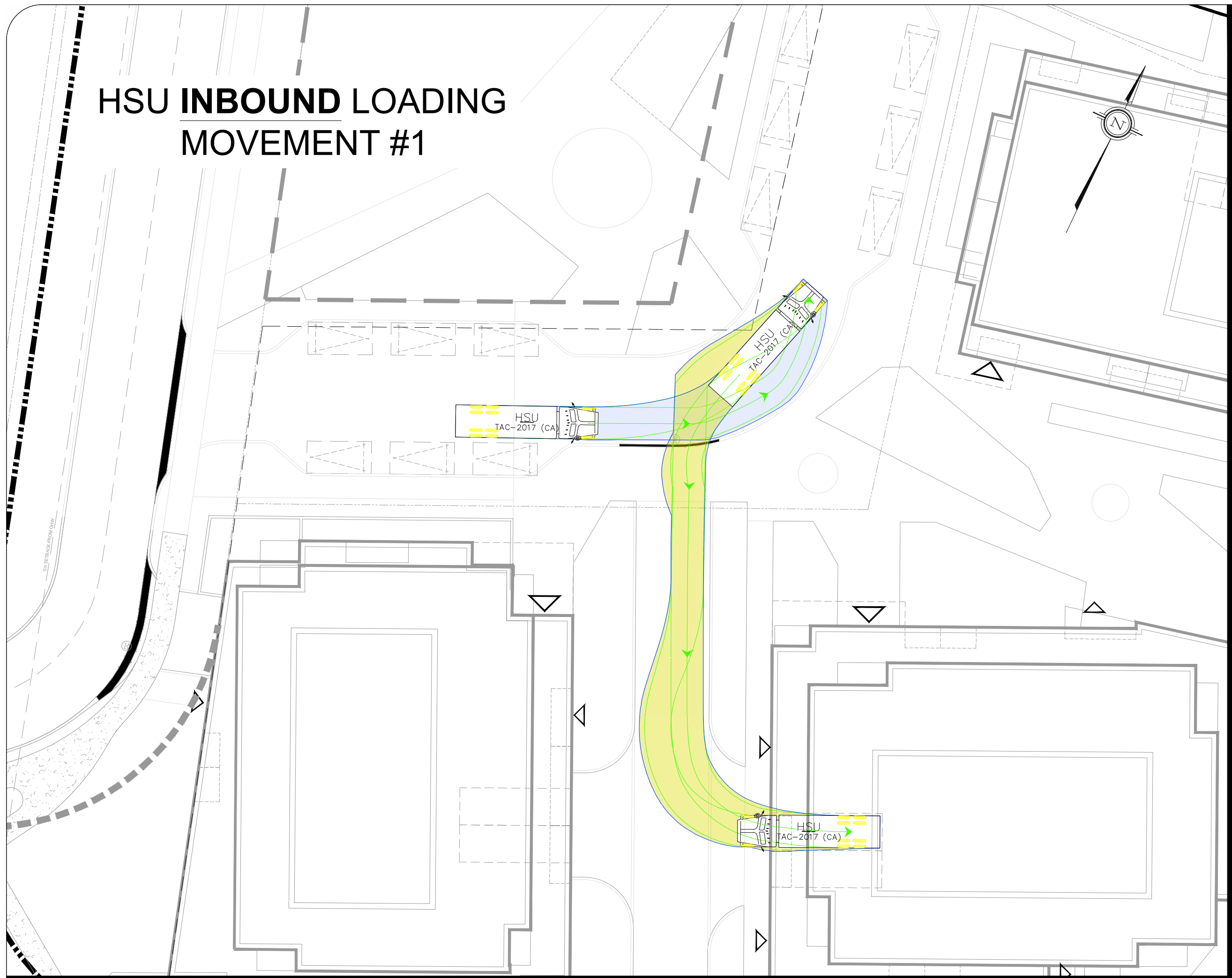
ARCHITECT:

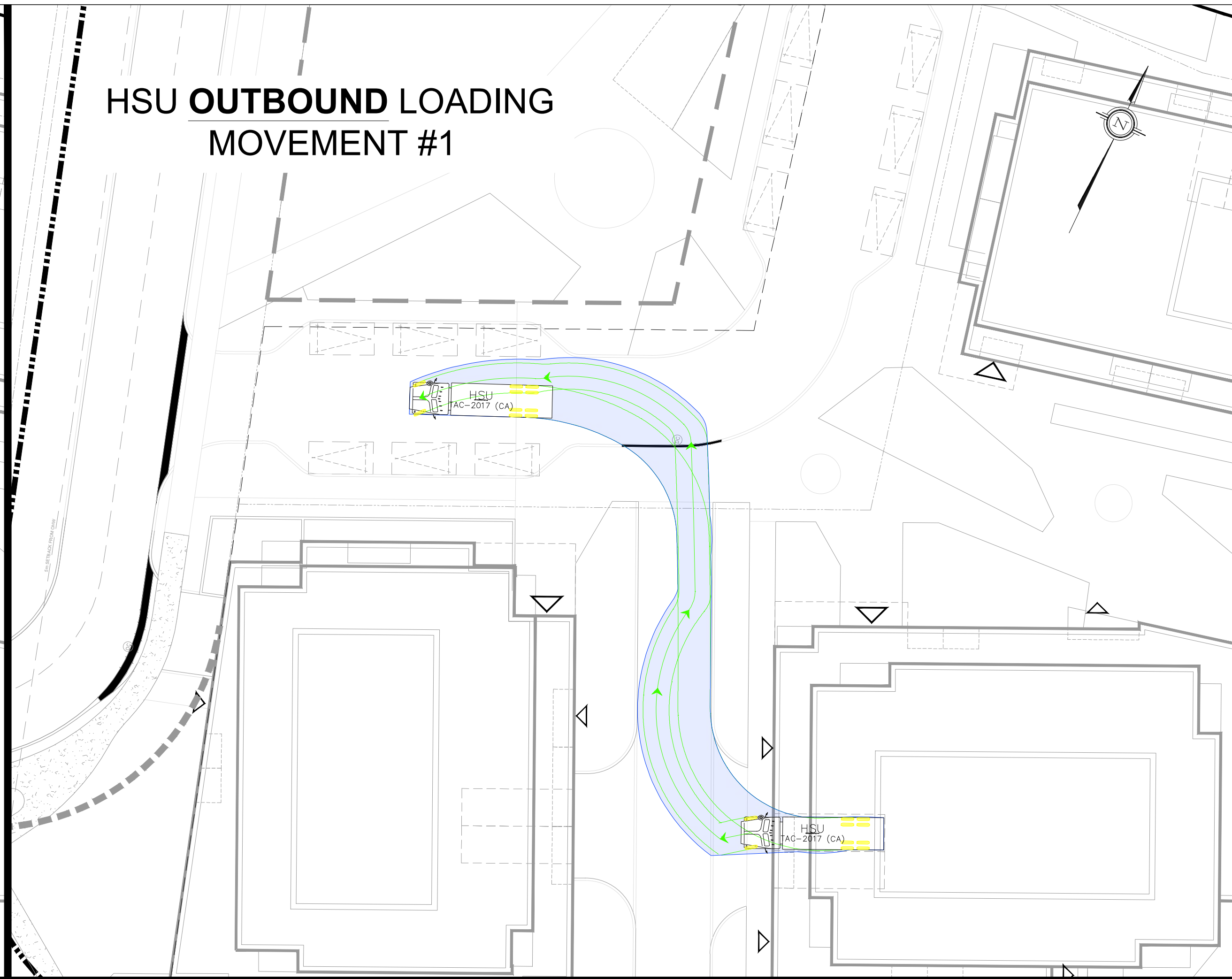
SITE: 1822 Bank Street

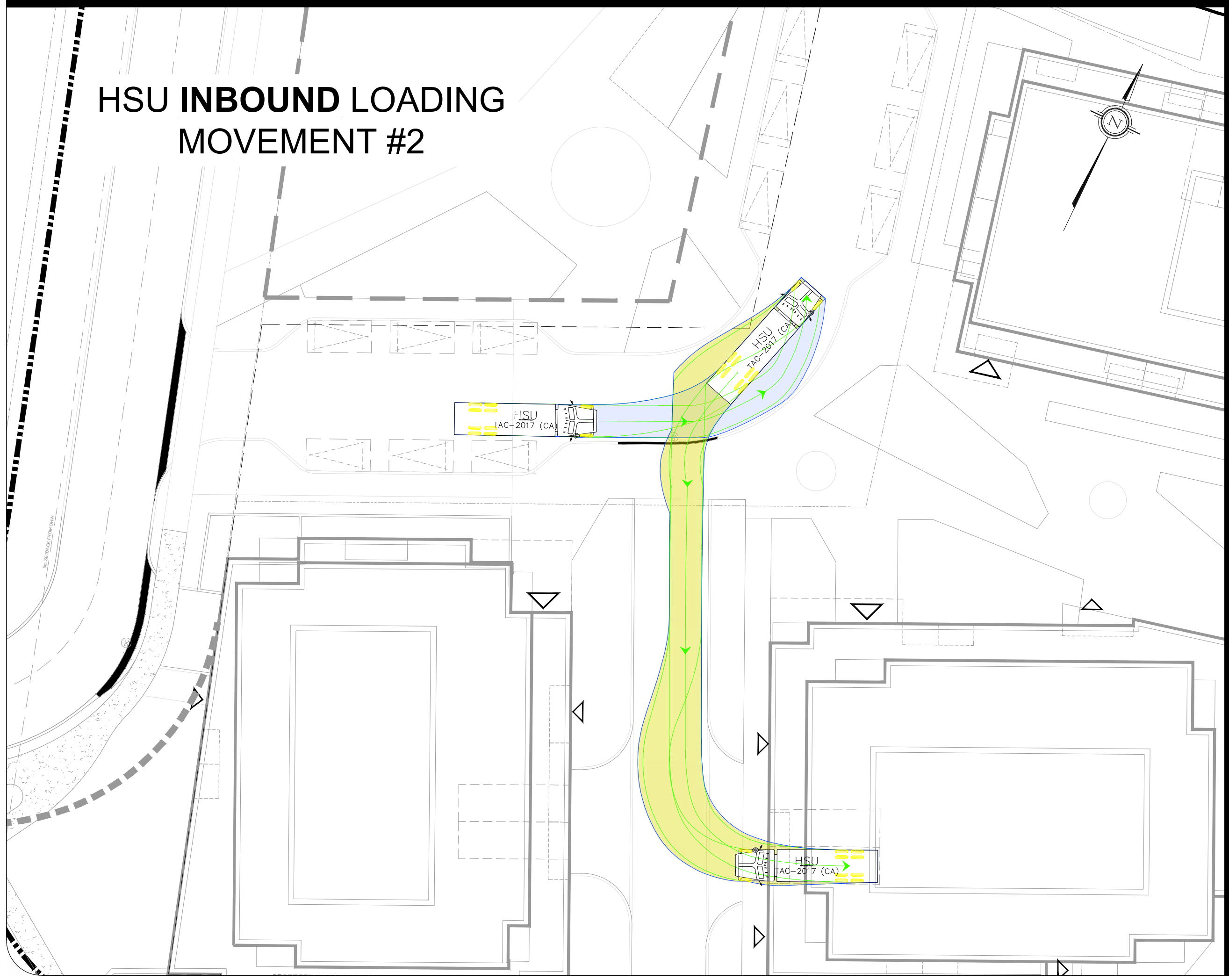
TITLE: Turning Movement Analysis
HSU Turning Movements (2)

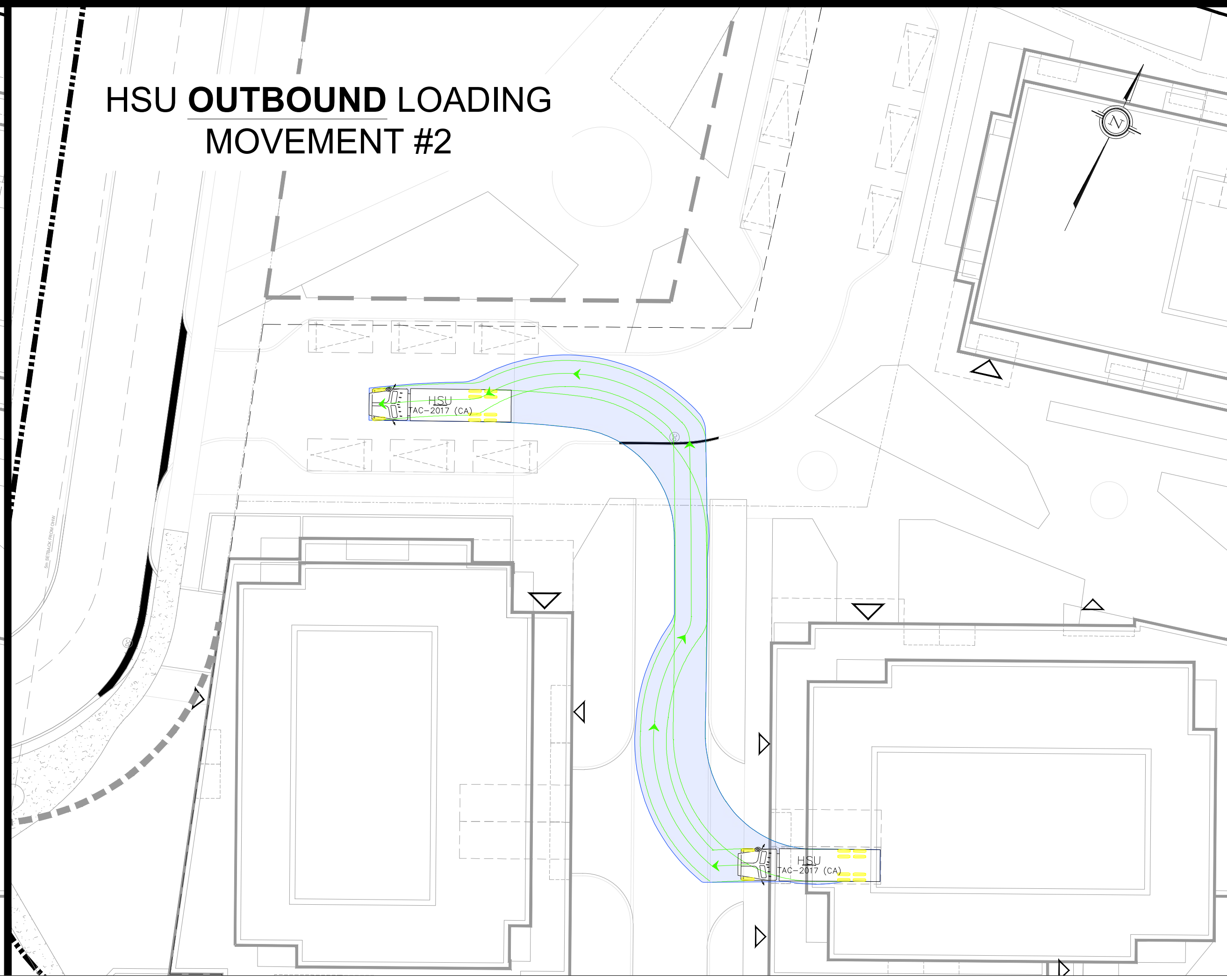
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2023-025	002	02









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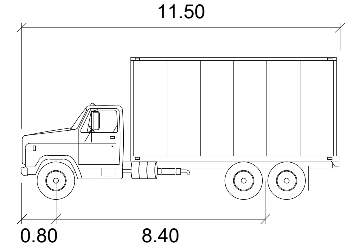


HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: BGO Walkley Centre

ARCHITECT:

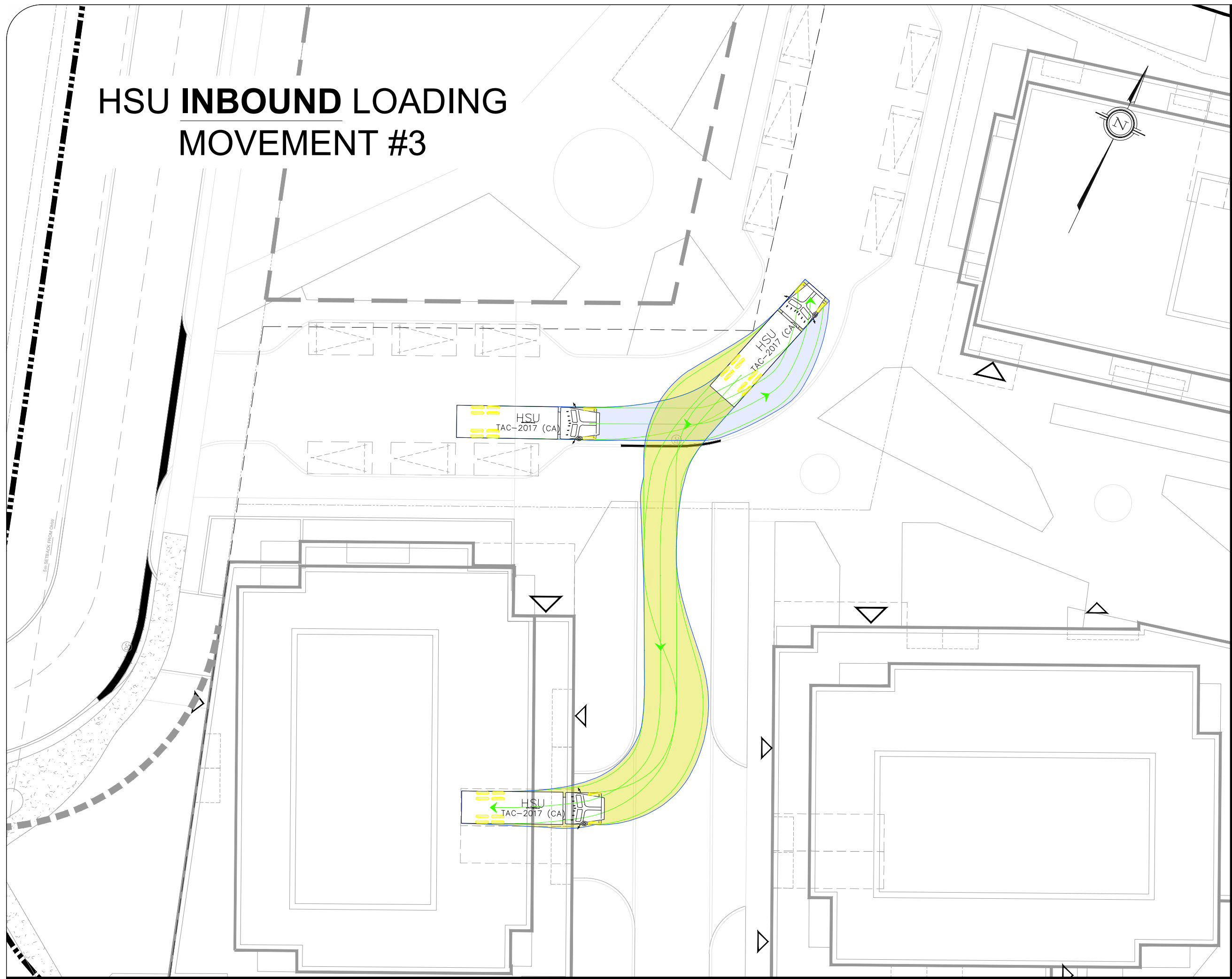
SITE: 1822 Bank Street

TITLE: Turning Movement Analysis
HSU Turning Movements (3)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2023-025	003	02

HSU **INBOUND** LOADING MOVEMENT #3



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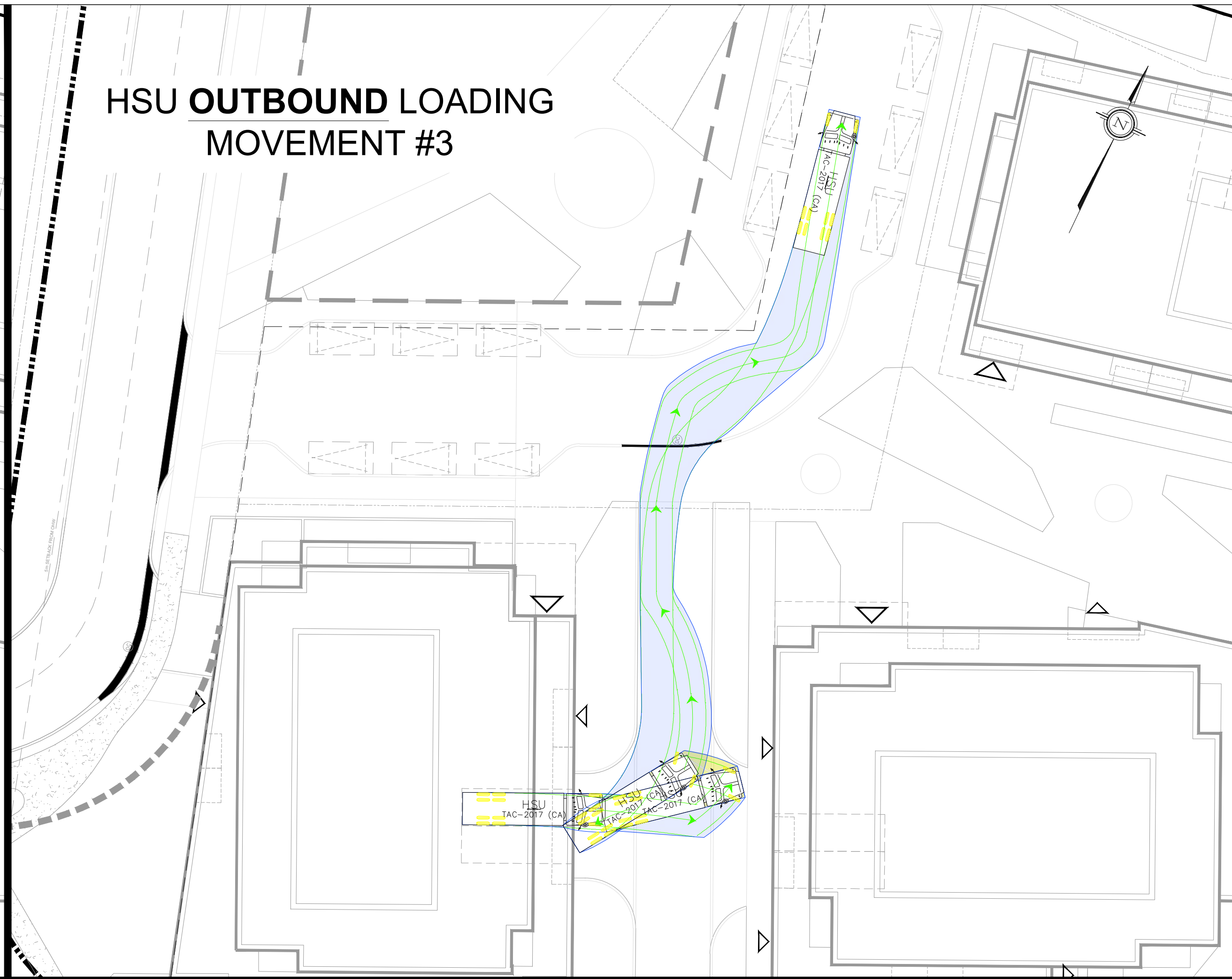

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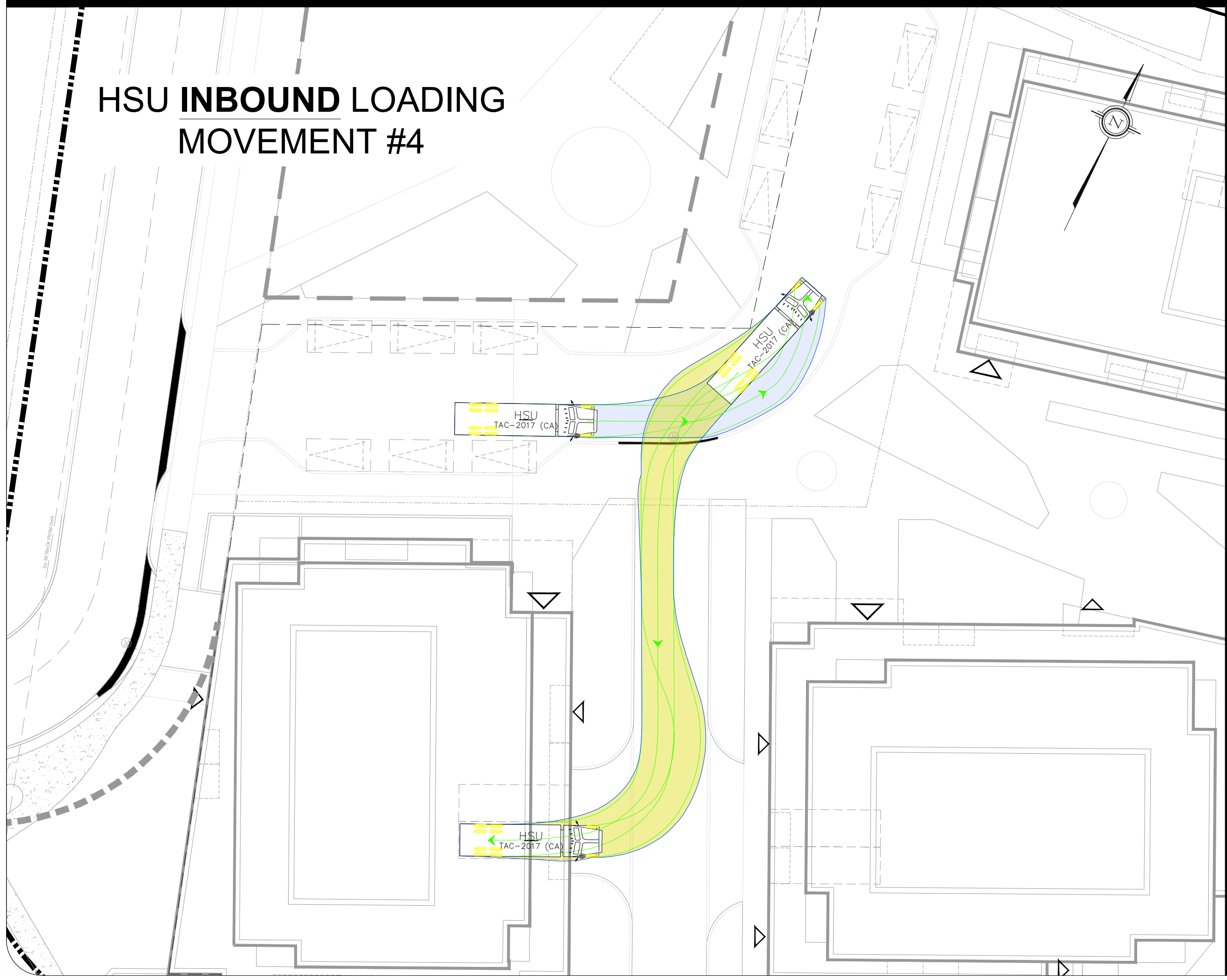

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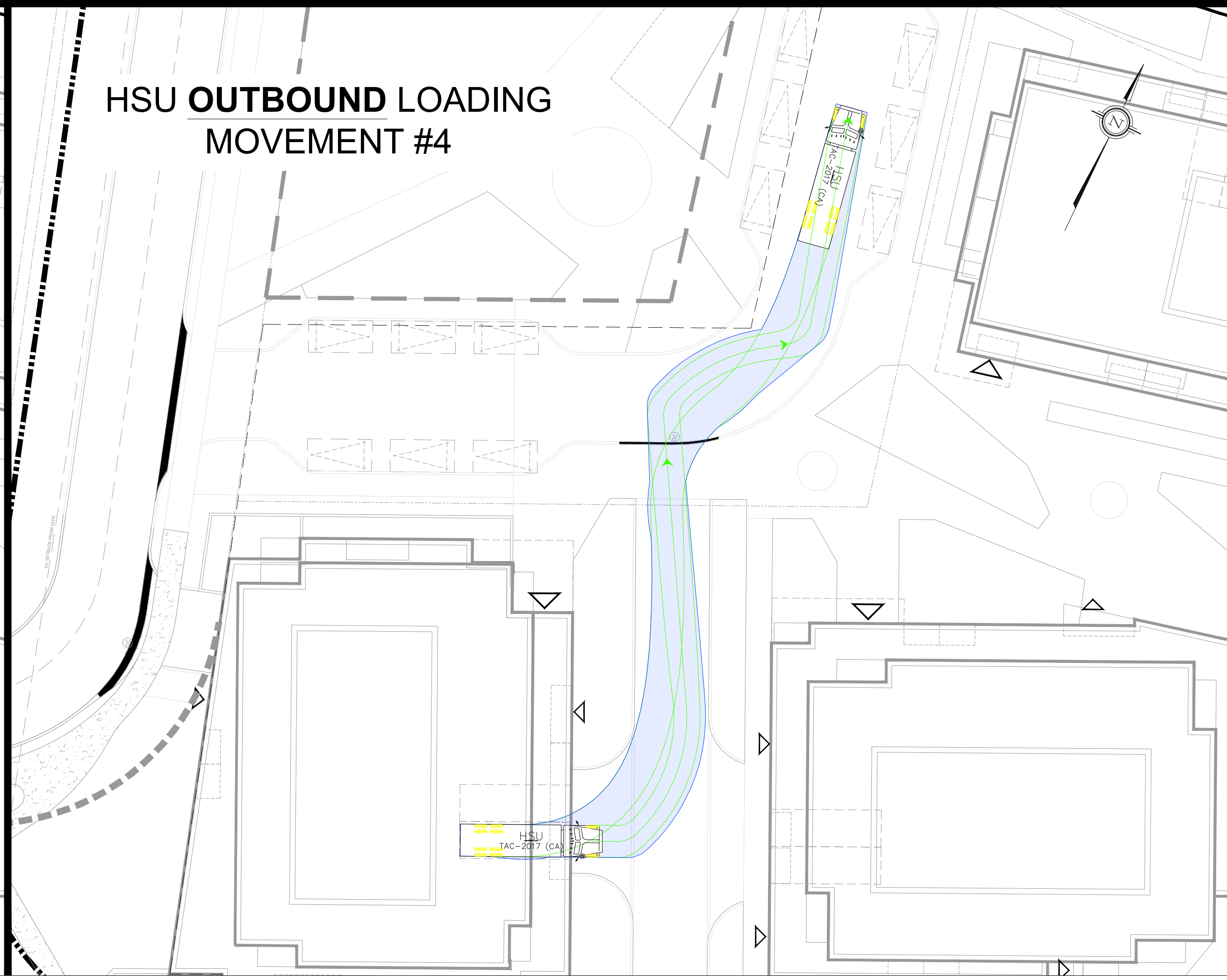

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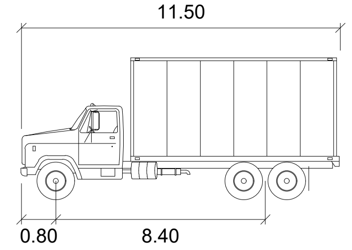


HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: BGO Walkley Centre

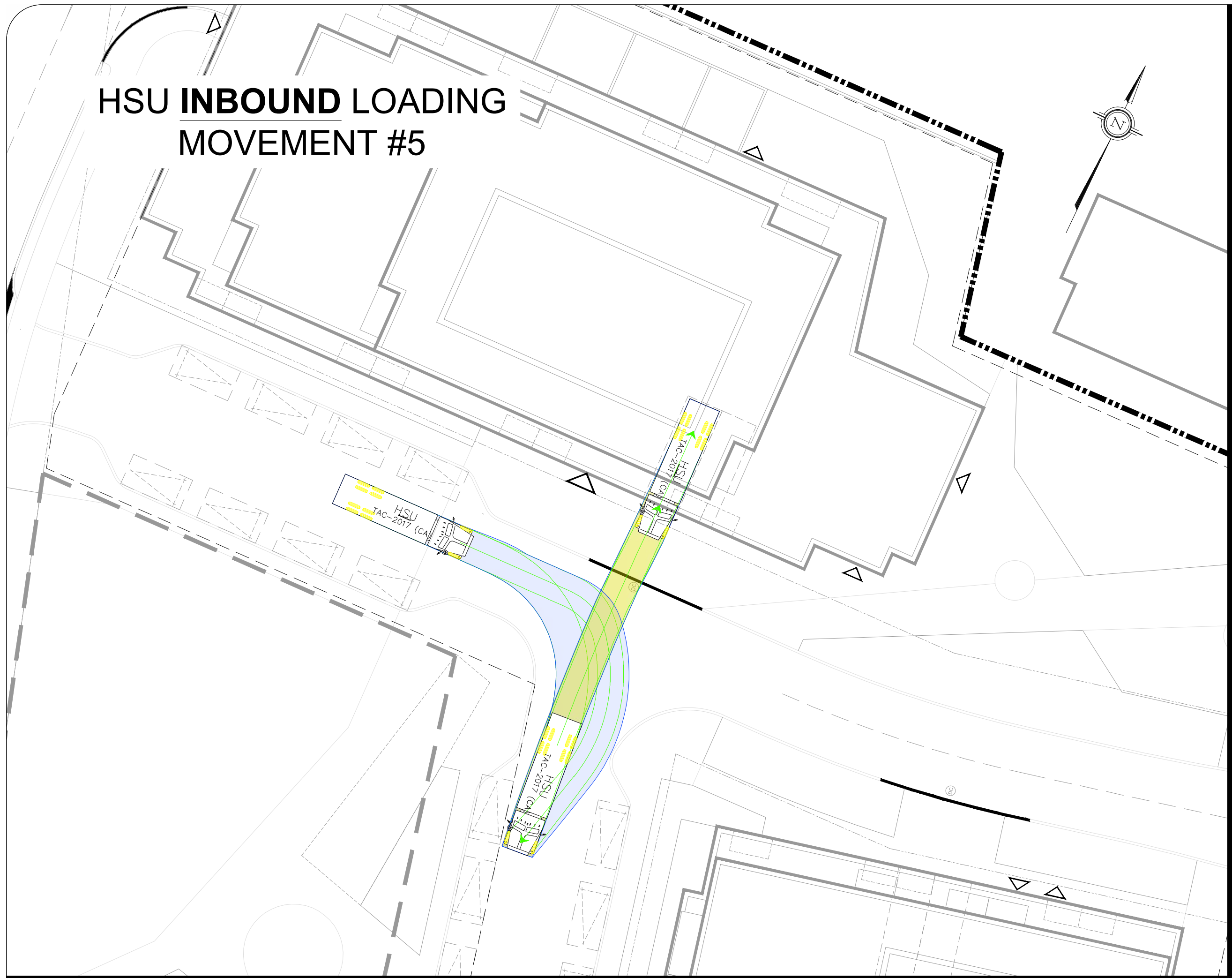
ARCHITECT:

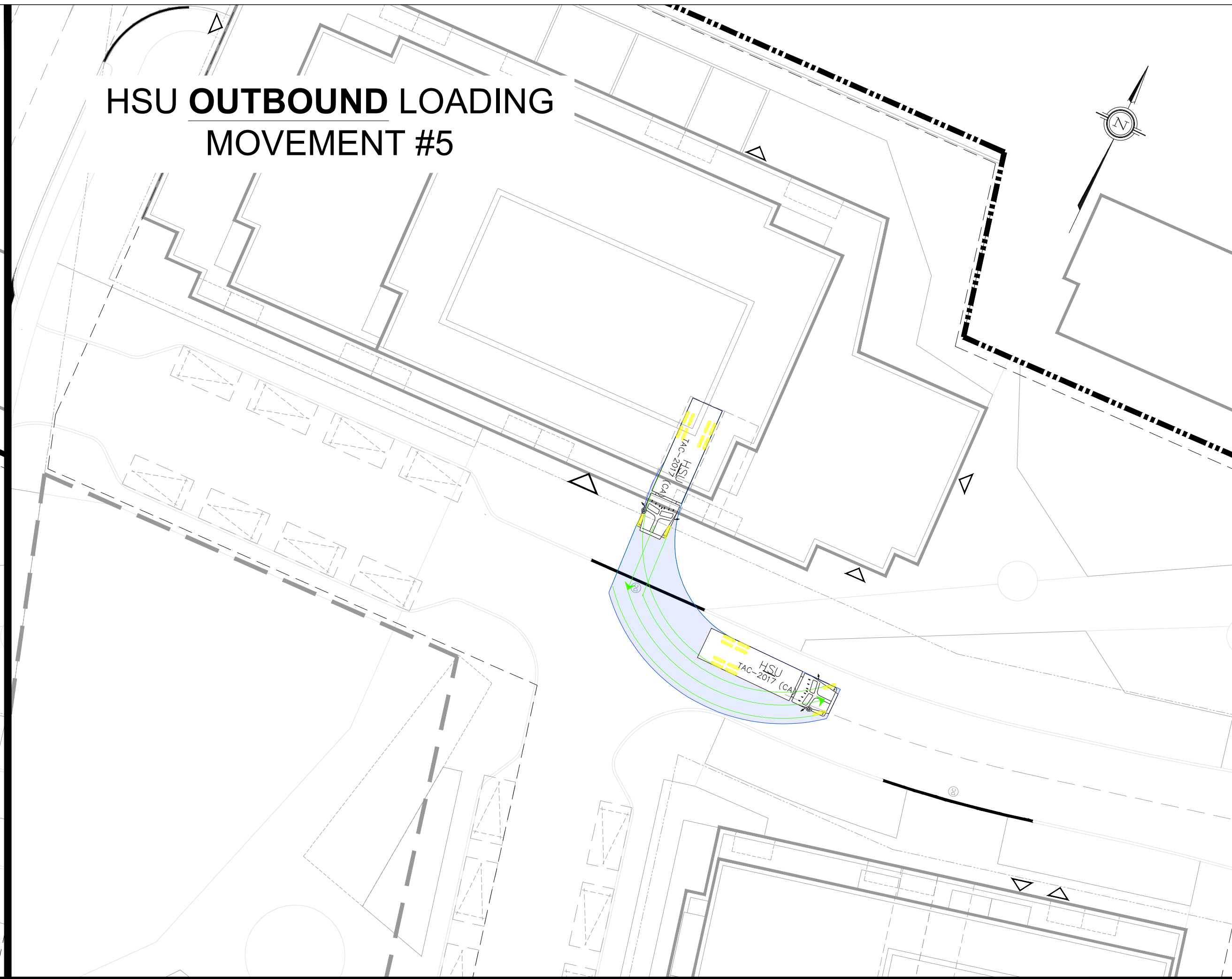
SITE: 1822 Bank Street

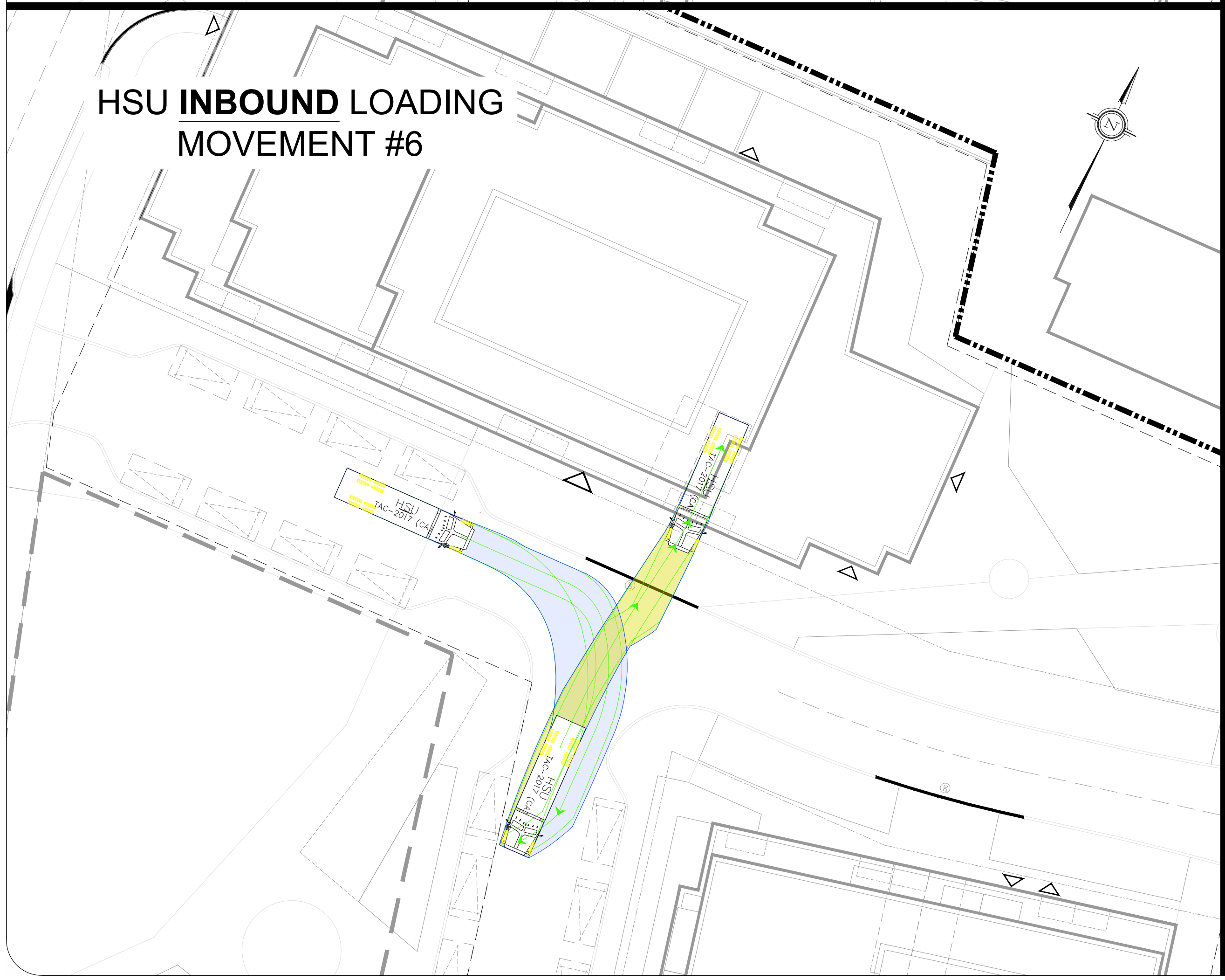
TITLE: Turning Movement Analysis
HSU Turning Movements (4)

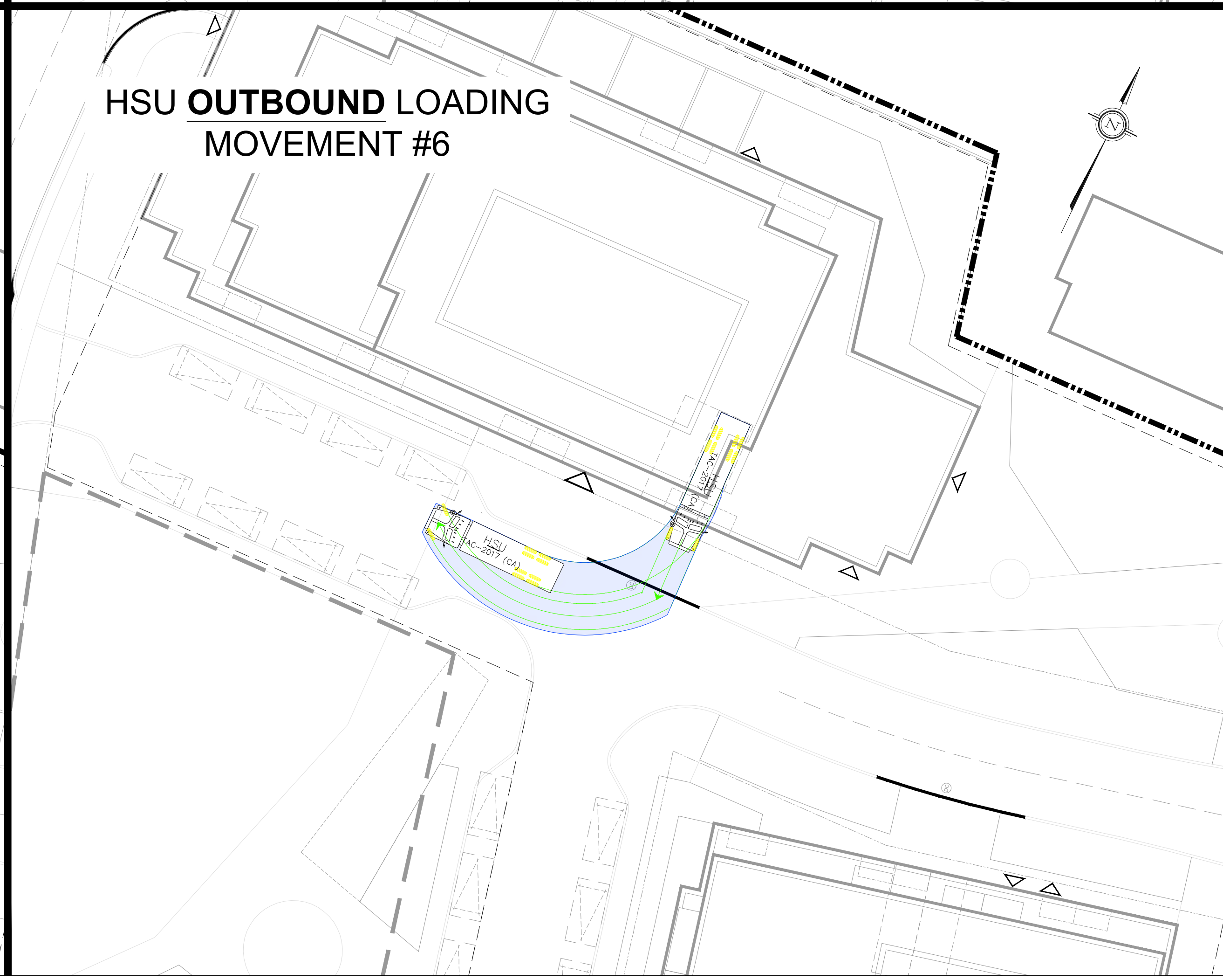
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2023-025	004	02









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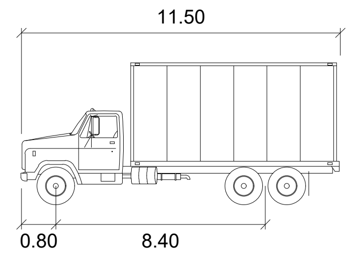


HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: BGO Walkley Centre

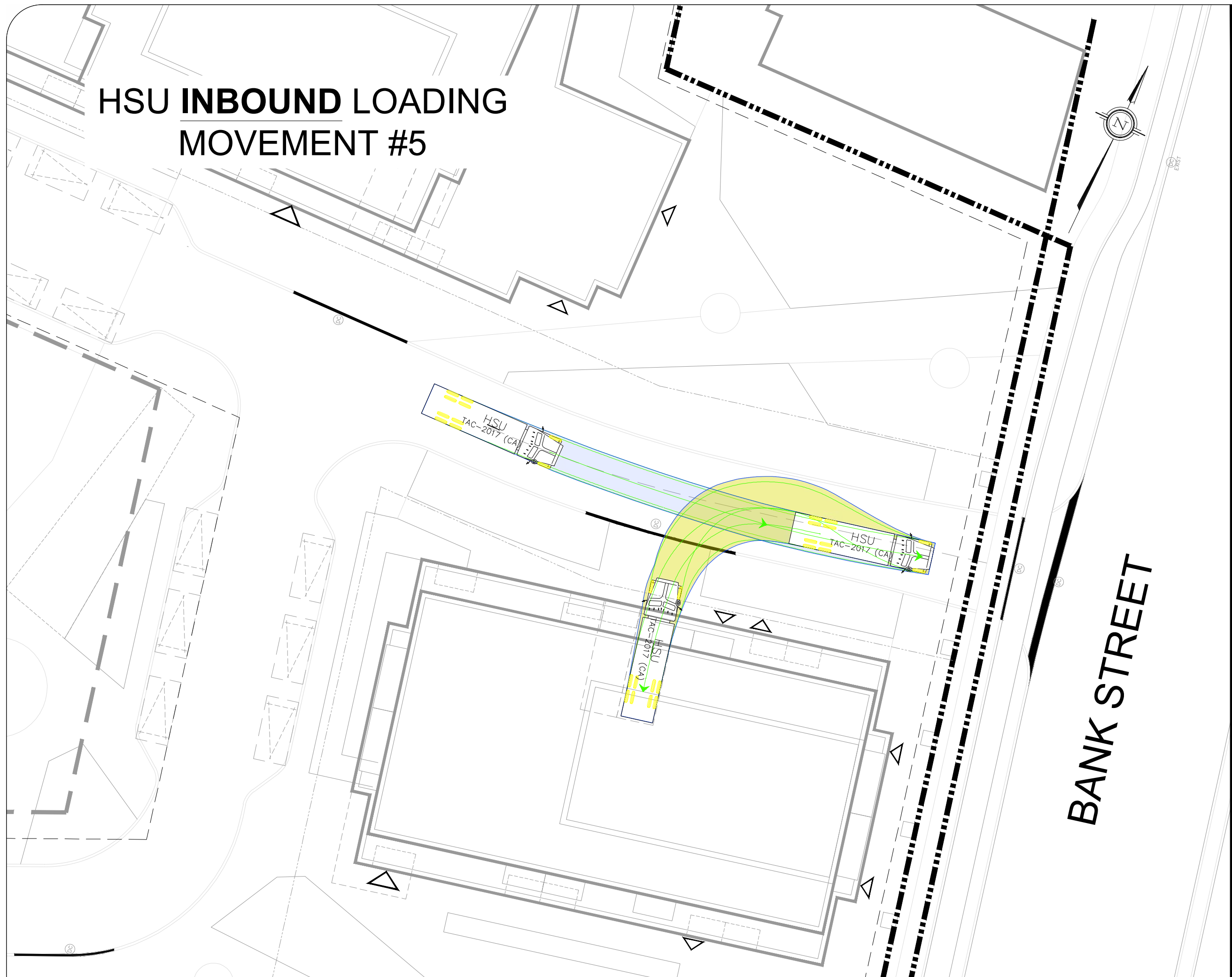
ARCHITECT:

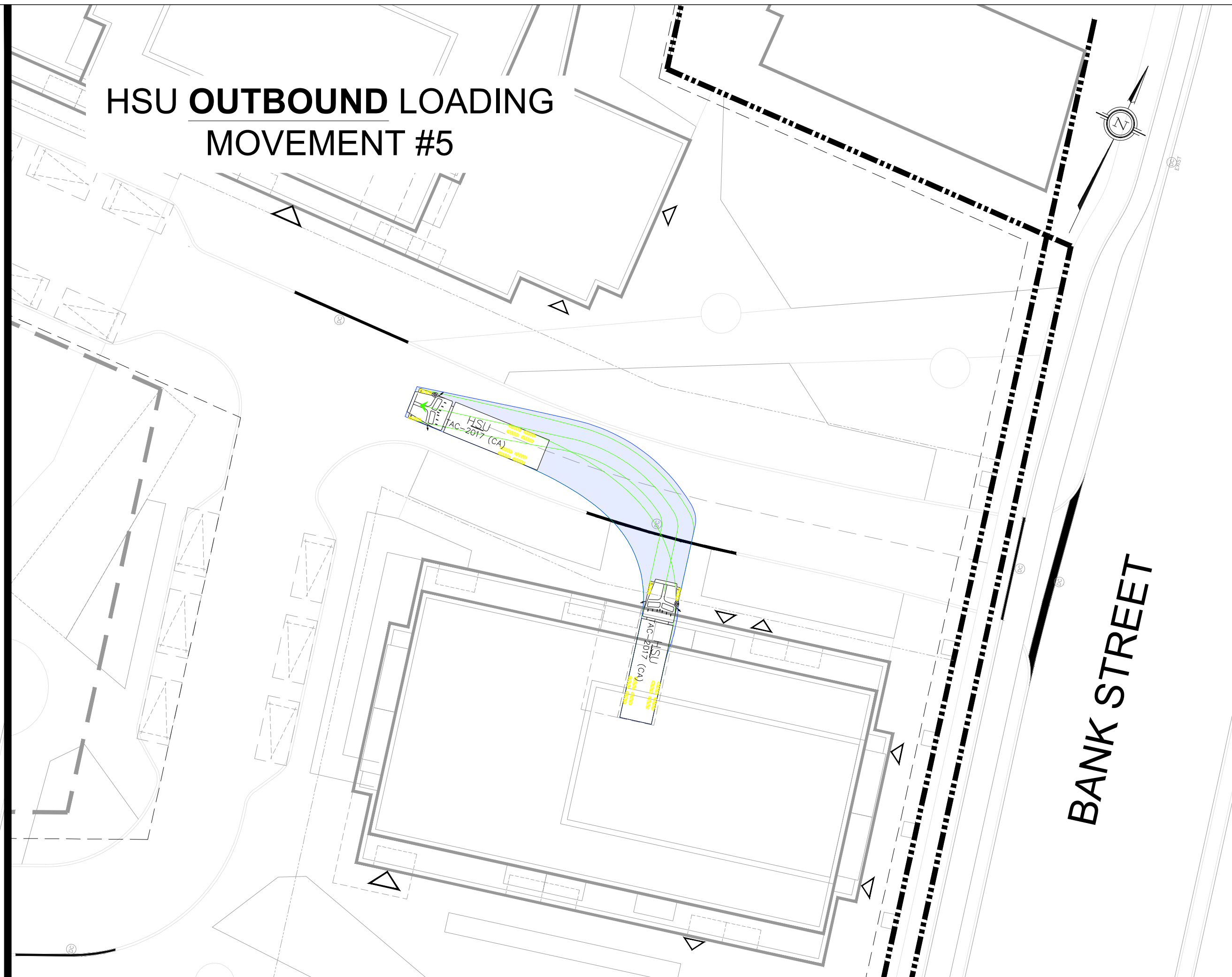
SITE: 1822 Bank Street

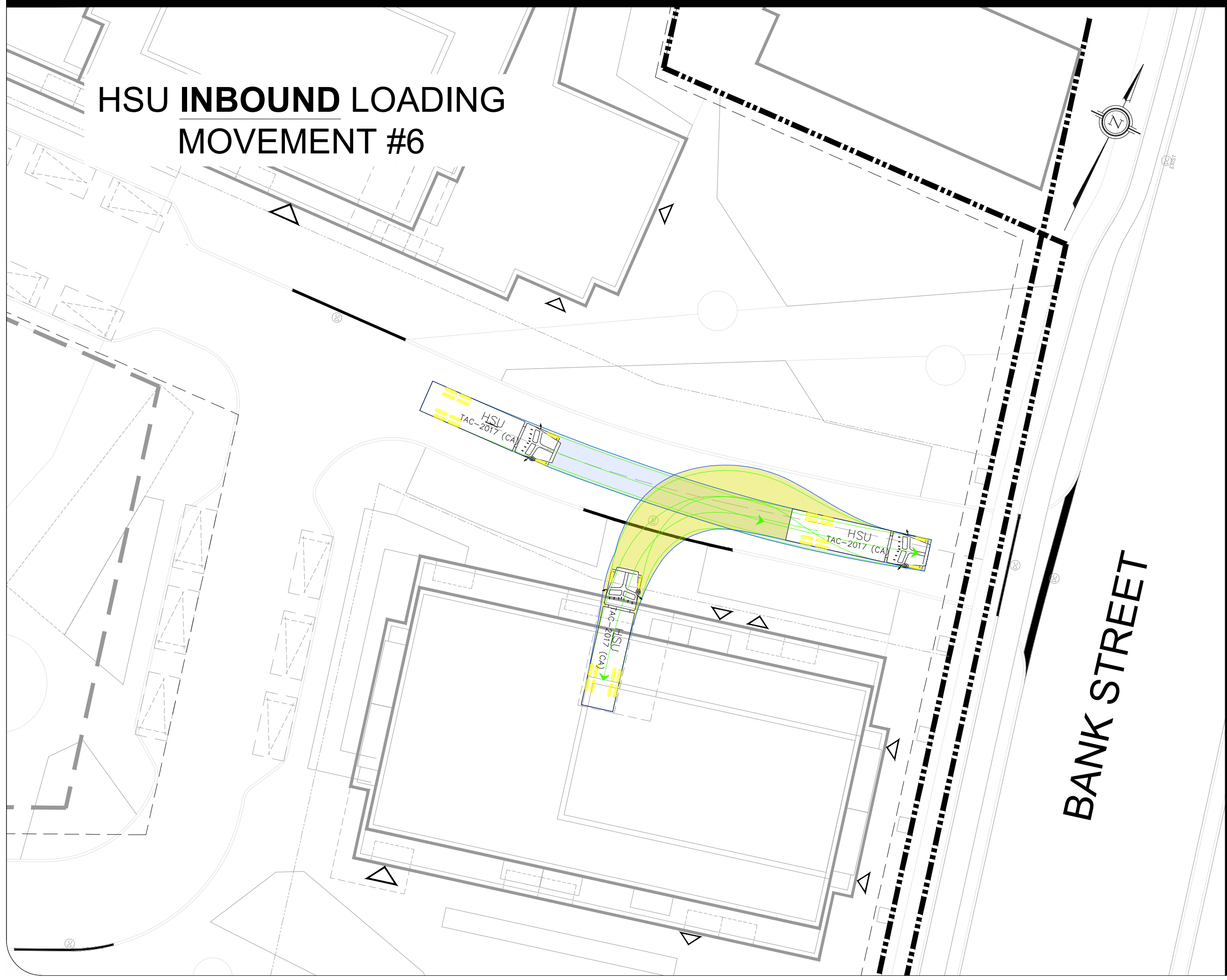
TITLE: Turning Movement Analysis
HSU Turning Movements (5)

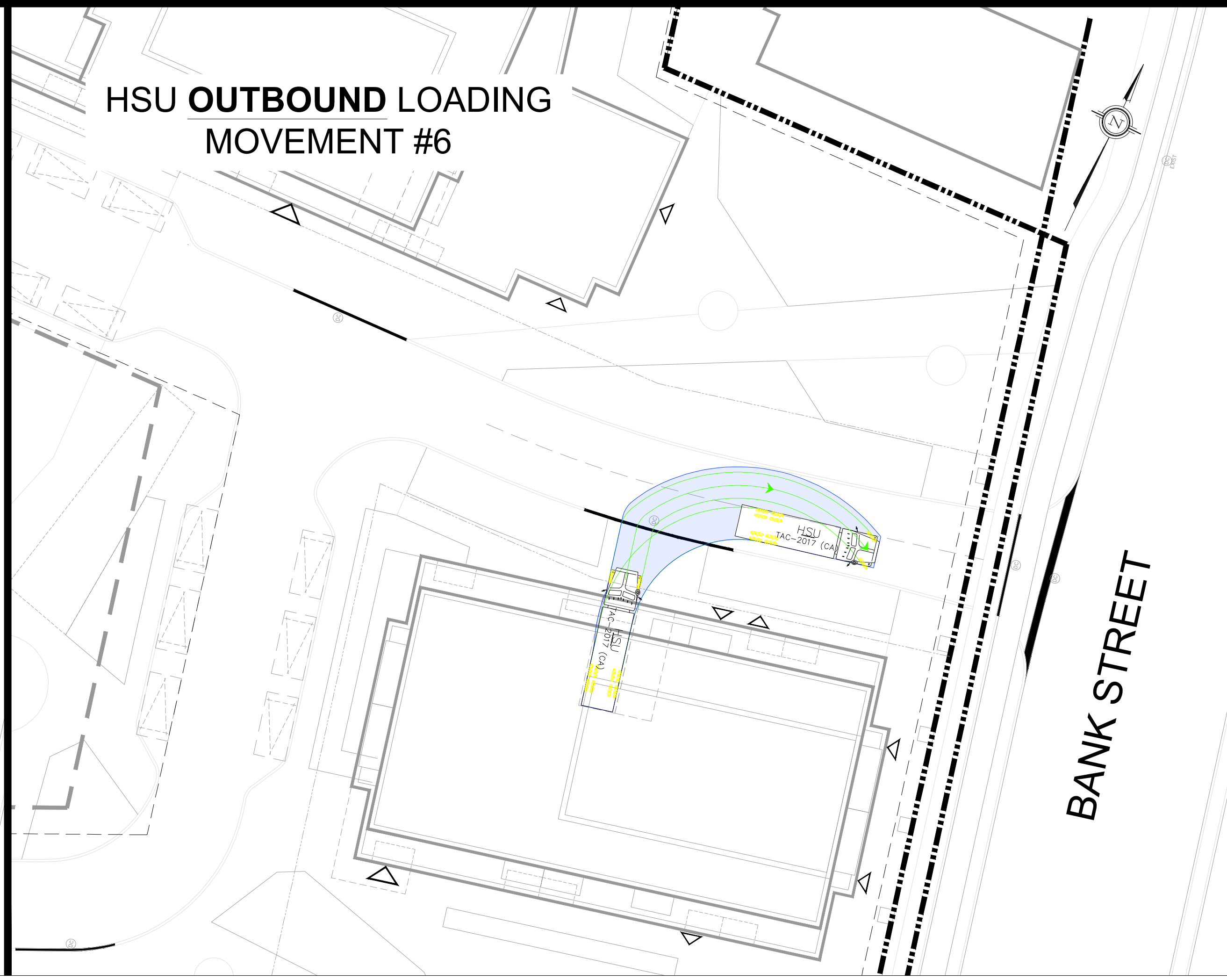
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2023-025	005	02









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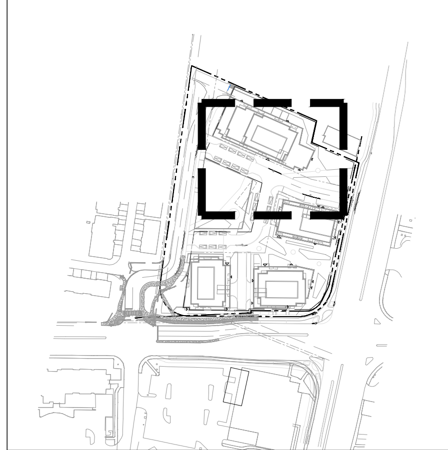
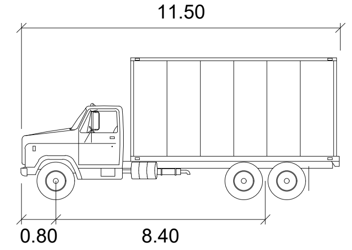




HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: BGO Walkley Centre

ARCHITECT:

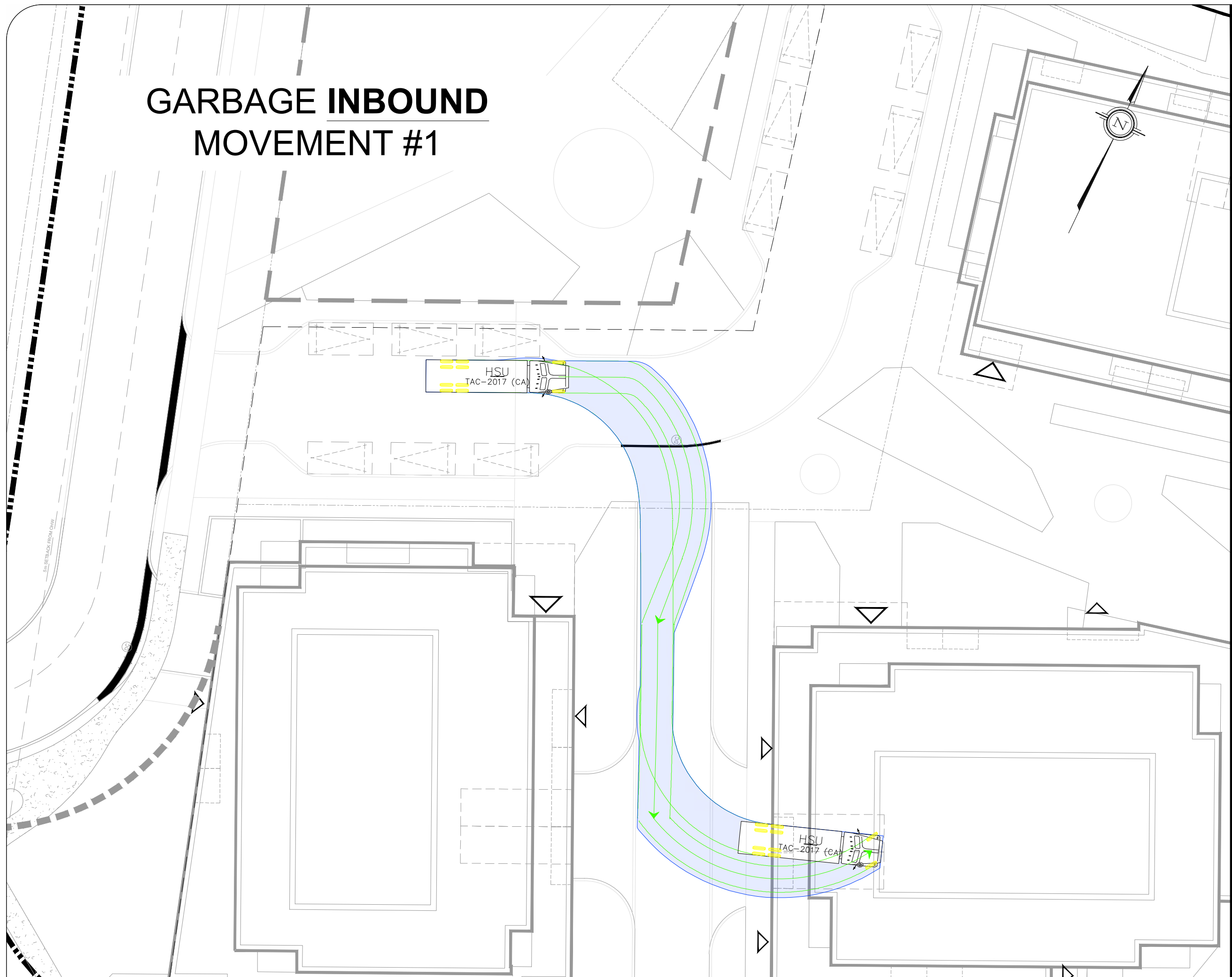
SITE: 1822 Bank Street

TITLE: Turning Movement Analysis
HSU Turning Movements (6)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2023-025	006	02

GARBAGE **INBOUND** MOVEMENT #1



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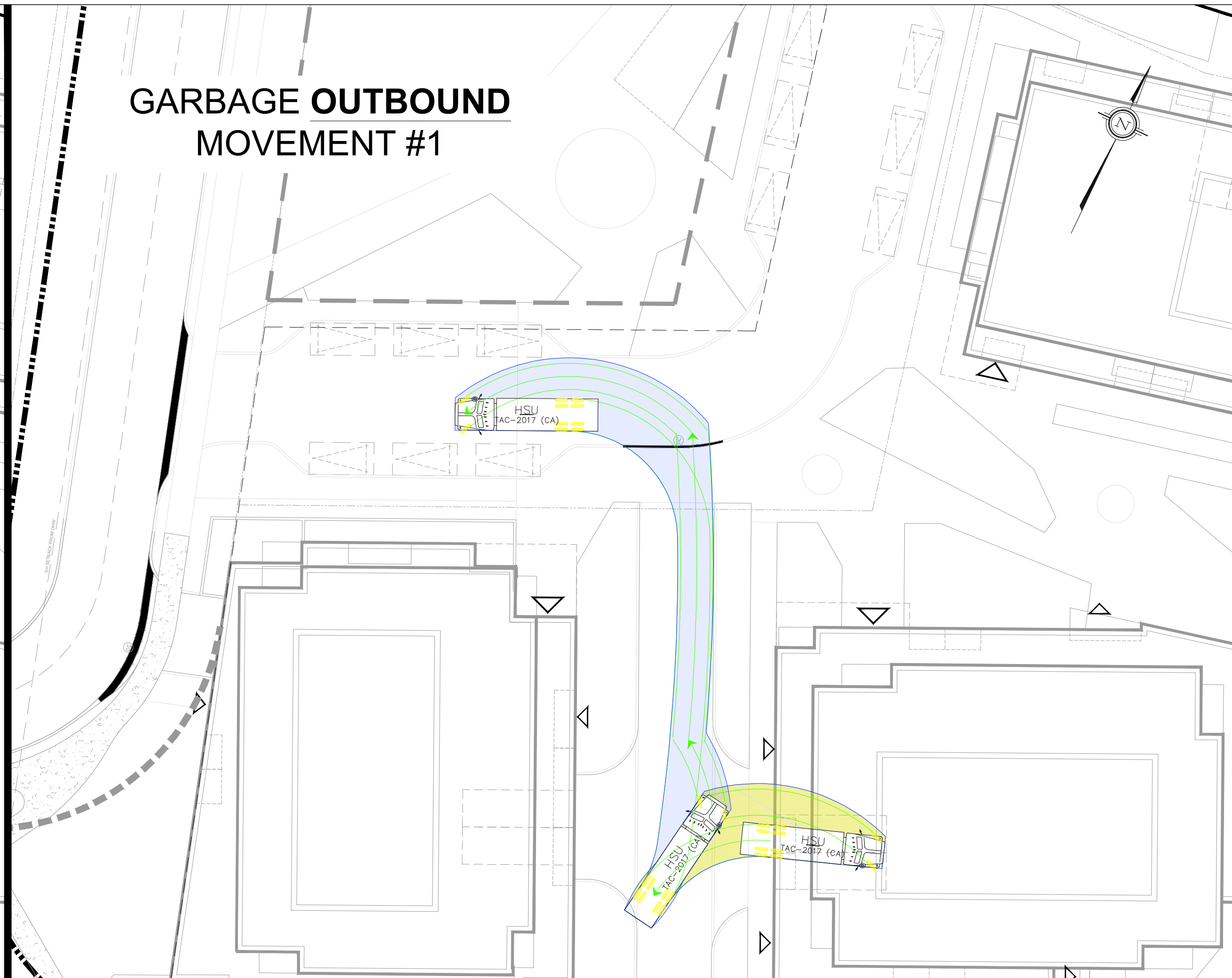

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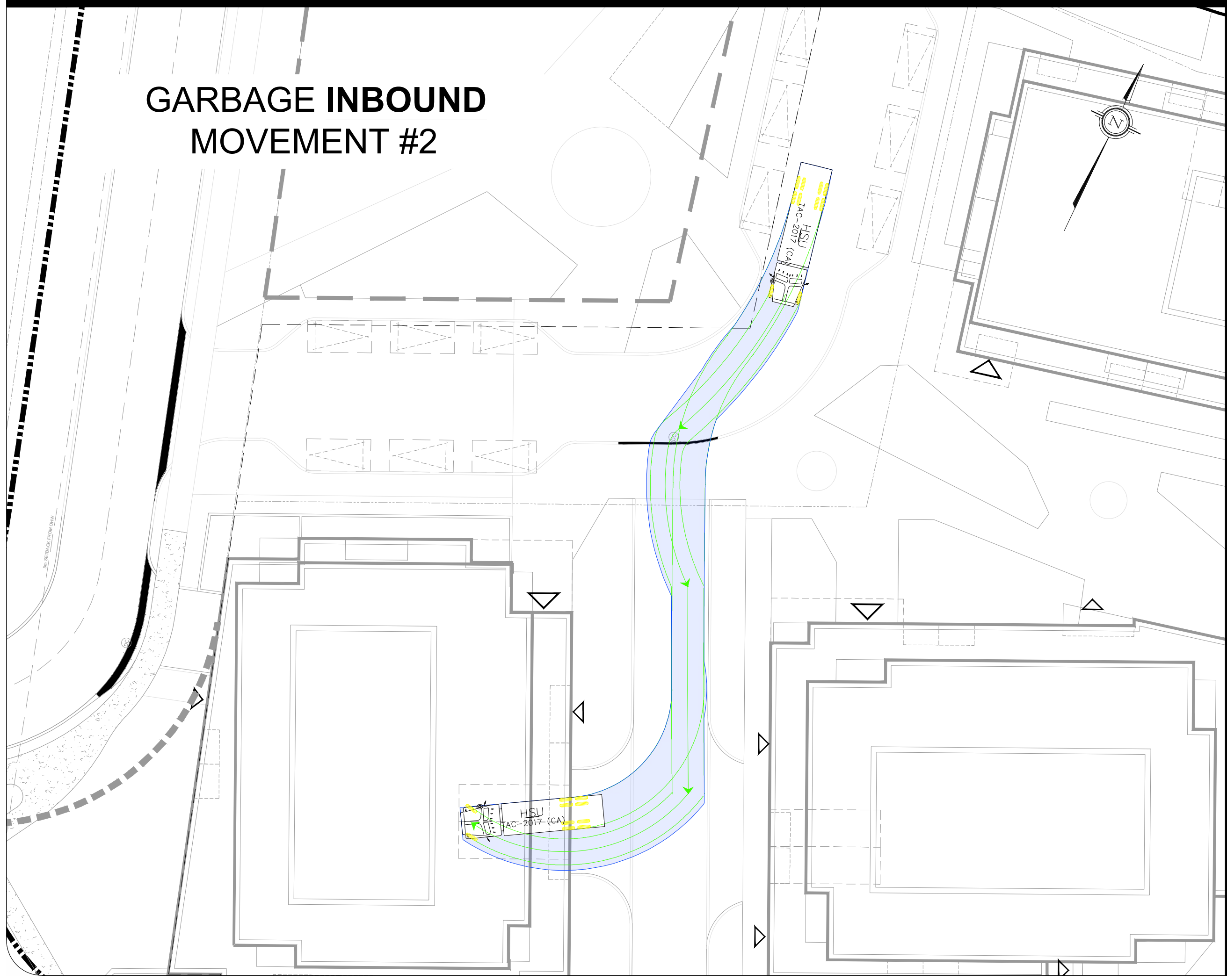

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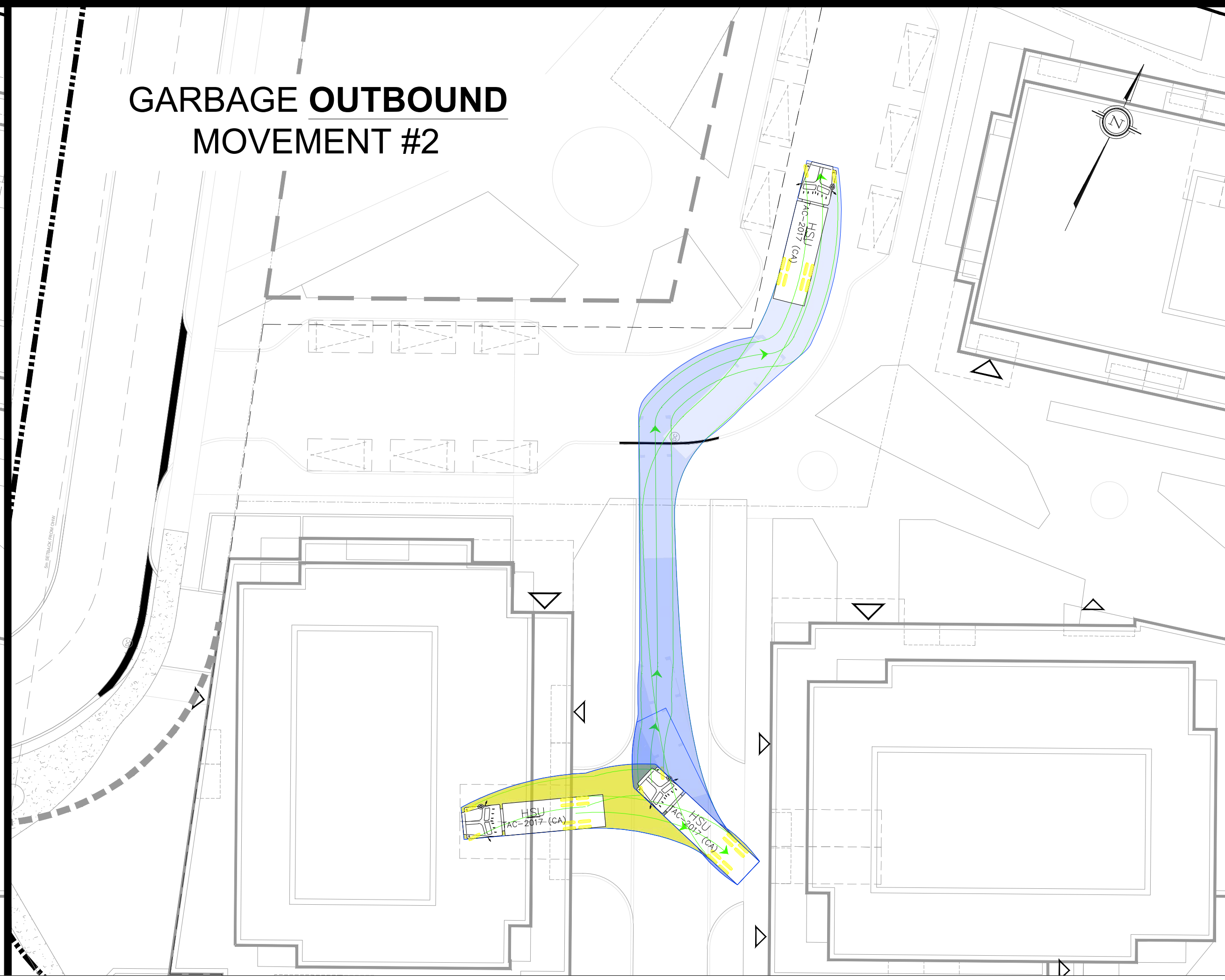

Notes:

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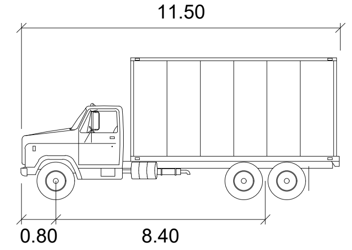


HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: BGO Walkley Centre

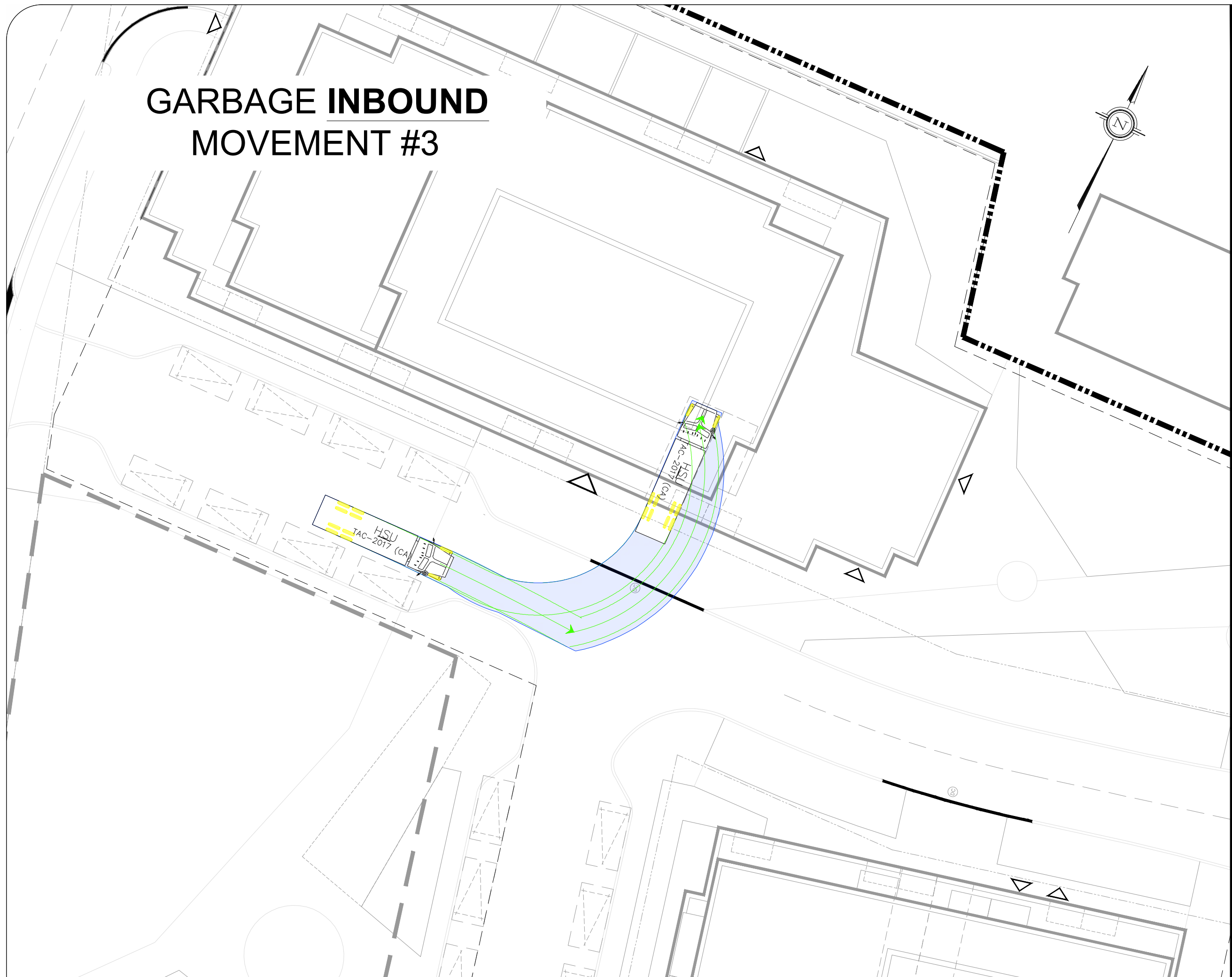
ARCHITECT:

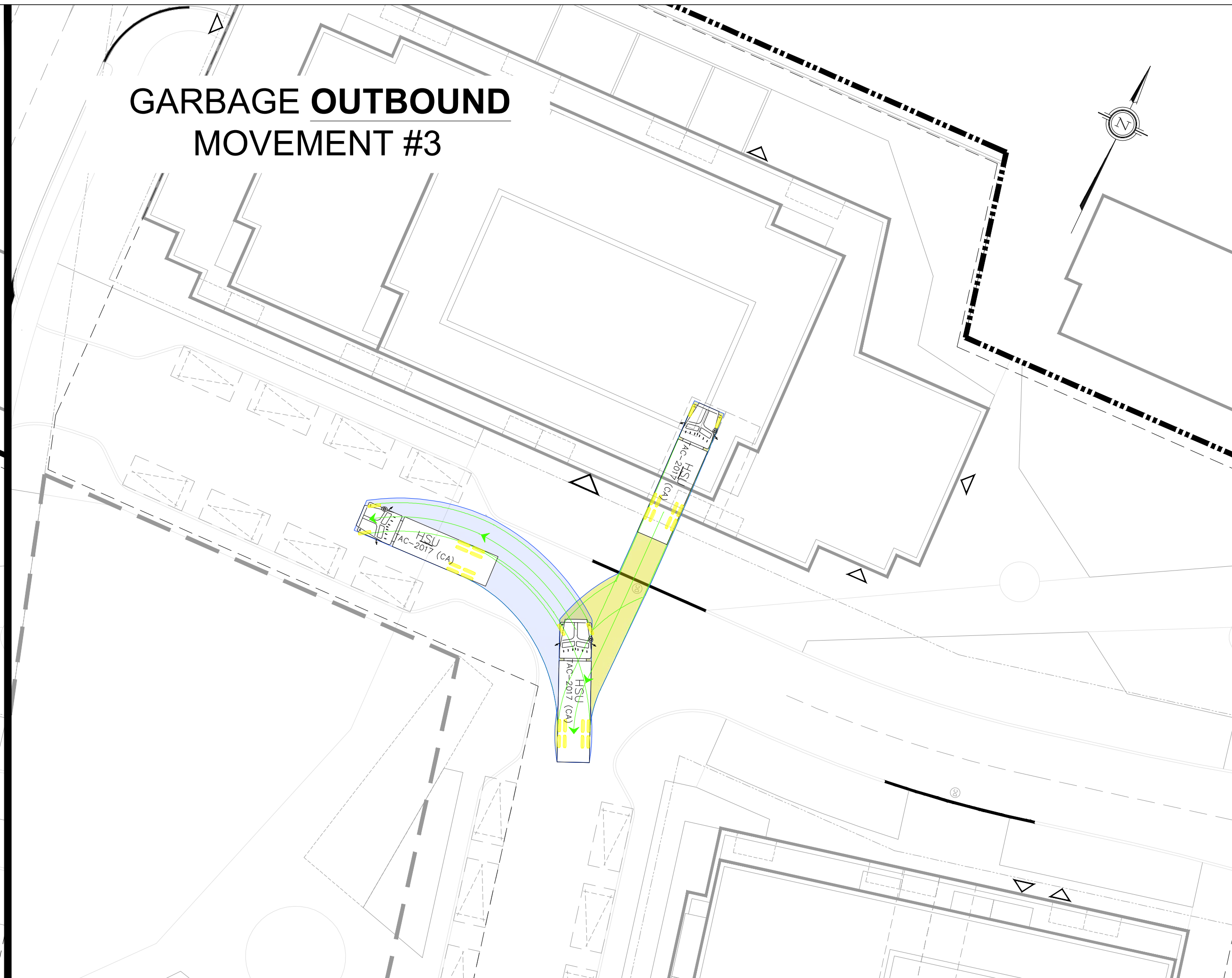
SITE: 1822 Bank Street

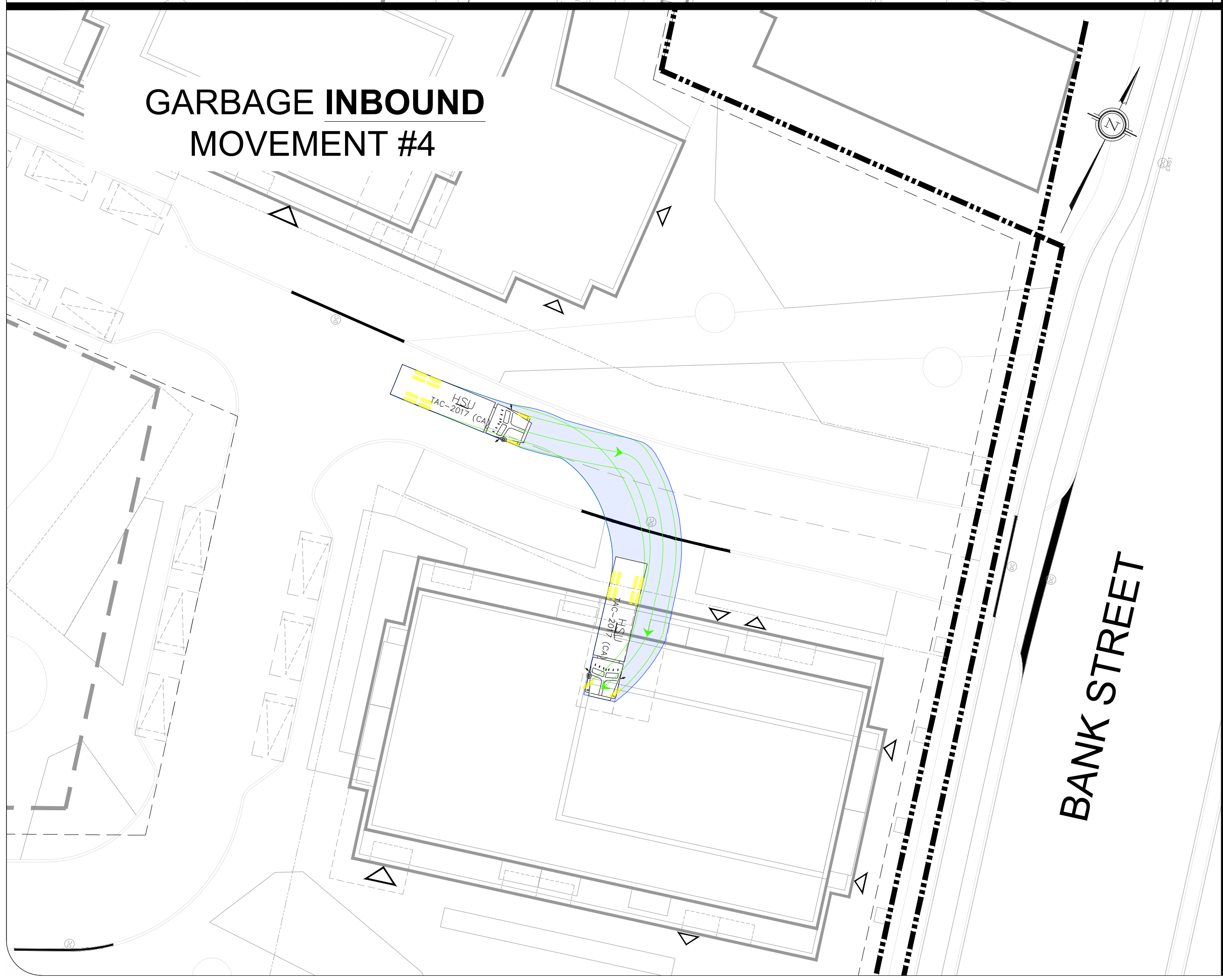
TITLE: Turning Movement Analysis
Garbage Turning Movements (1)

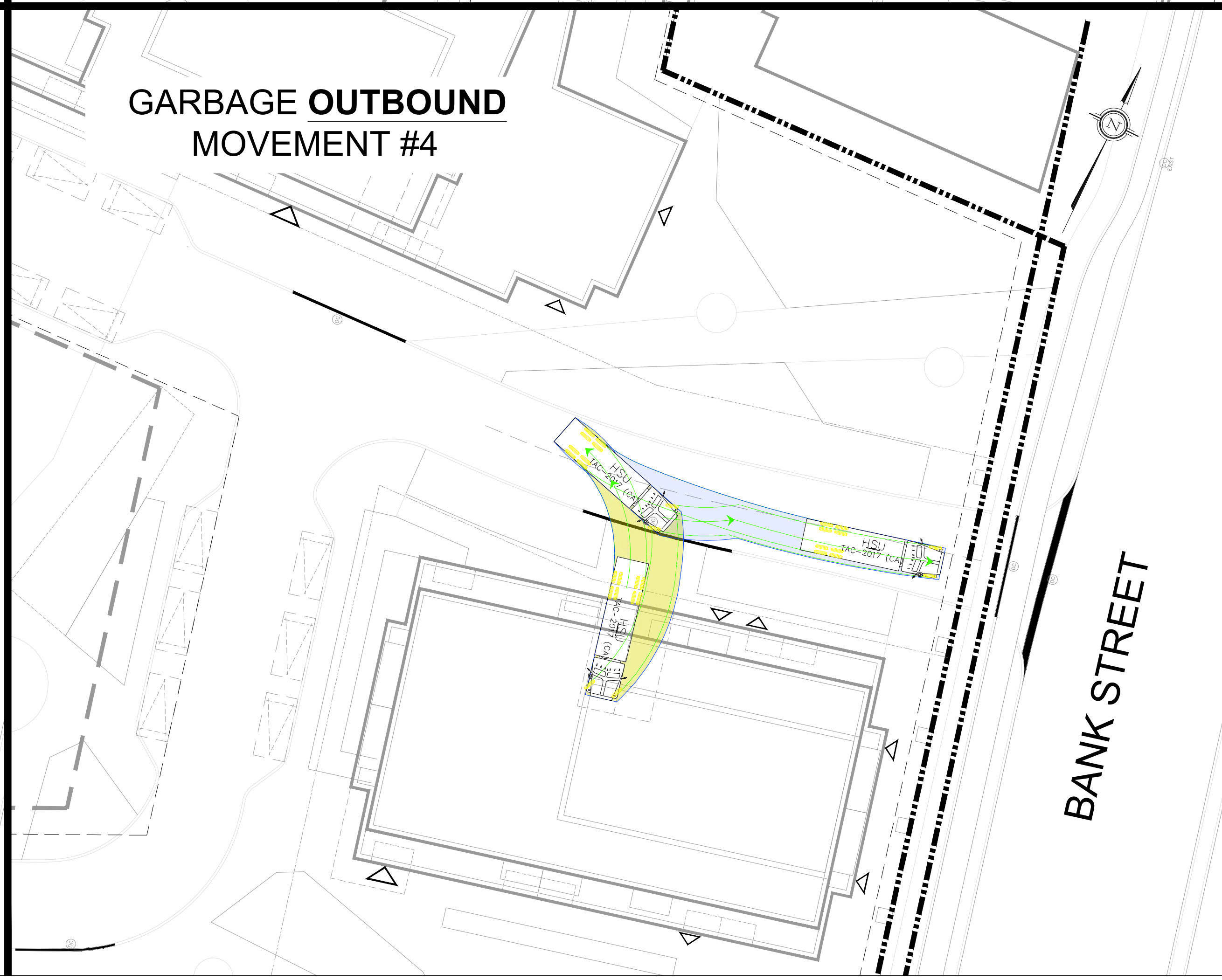
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2023-025	007	02









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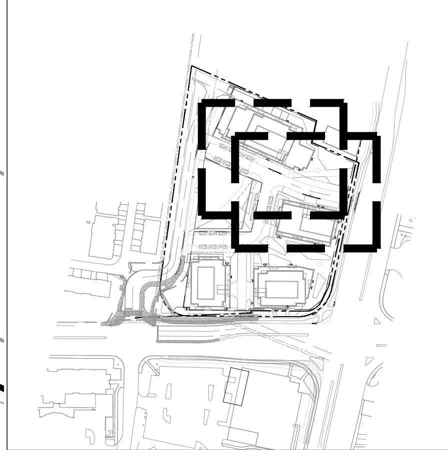
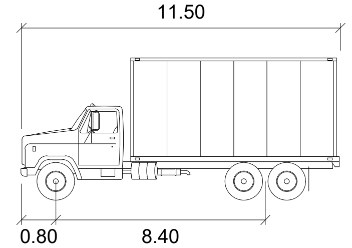




HSU

		meters
Width	:	2.60
Track	:	2.60
Lock to Lock Time	:	6.0
Steering Angle	:	40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: BGO Walkley Centre

ARCHITECT:

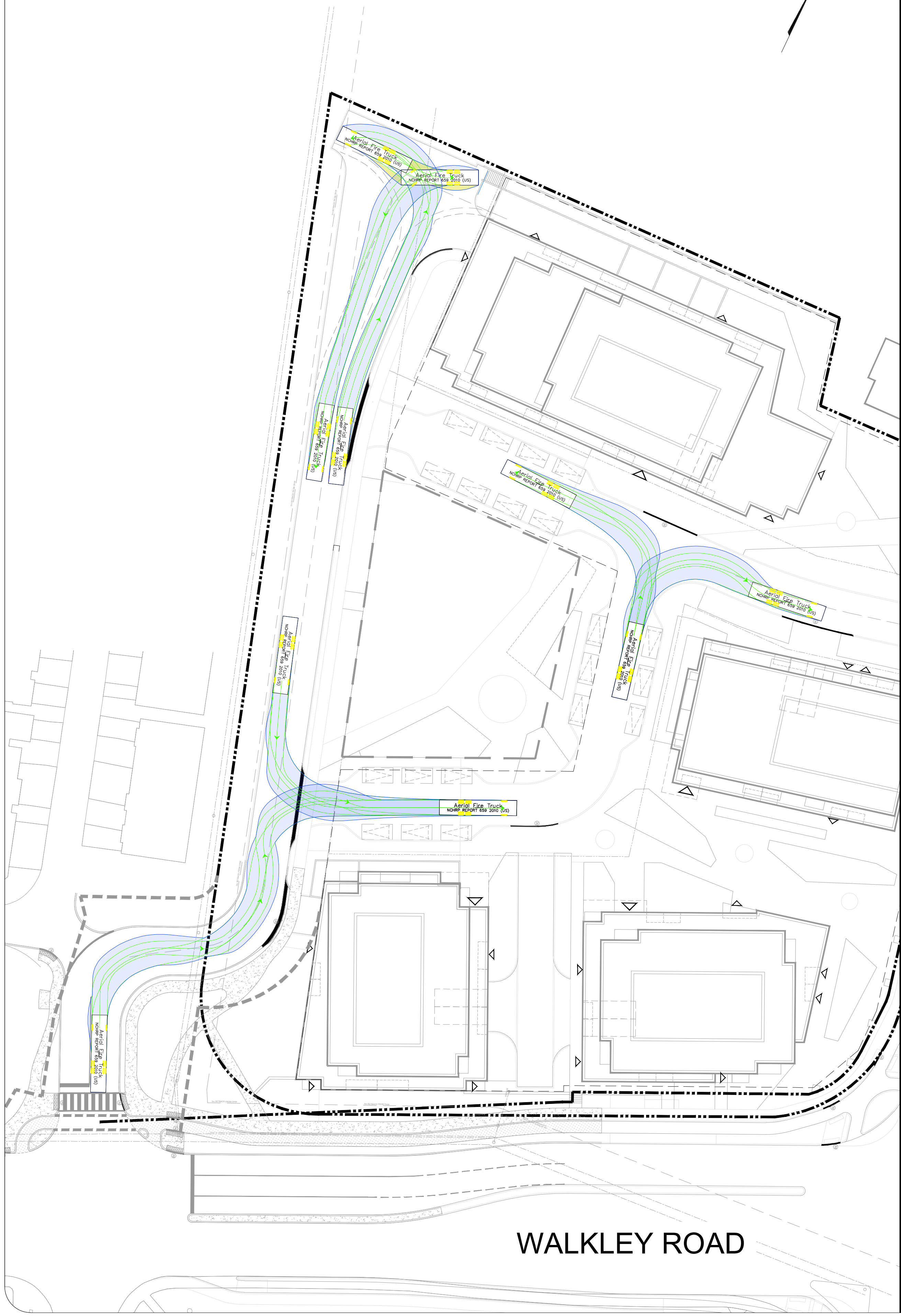
SITE: 1822 Bank Street

TITLE: Turning Movement Analysis
Garbage Turning Movements (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2023-025	008	02

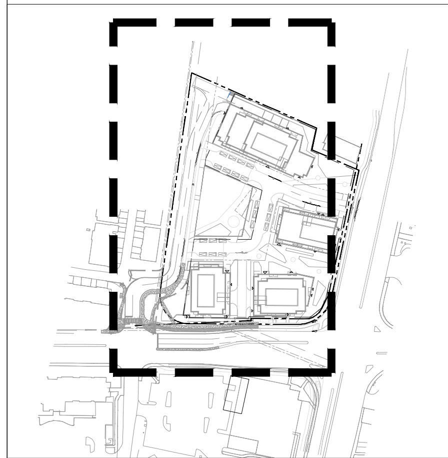
FIRE TURNING MOVEMENTS #1

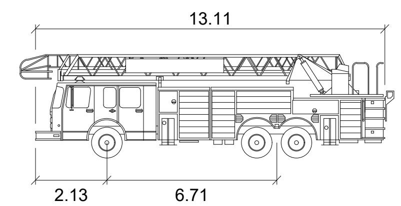


FIRE TURNING MOVEMENTS #2

Notes:

KEY PLAN:





Aerial Fire Truck

		meters
Width	:	2.59
Track	:	2.59
Lock to Lock Time	:	6.0
Steering Angle	:	33.3

REV:	DESCRIPTION:	BY:	DATE:
02	Issued for Review	AN	2024-10-04

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: BGO Walkley Centre

ARCHITECT:

SITE: 1822 Bank Street

TITLE: Turning Movement Analysis
Fire Turning Movements

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-10-04	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2023-025	009	02

Appendix J

MMLOS Worksheets

Multi-Modal Level of Service - Segments Form

Consultant	**CGH Transportation Inc**	**Project**	**2023-025**
Scenario	**Existing/Future**	**Date**	**10/3/2024**
Comments			

SEGMENTS			Bank St Existing	Bank St Future	Walkley Rd Existing	Walkley Rd Future
Pedestrian	Sidewalk Width Boulevard Width	**-**	≥ 2 m 0.5 - 2 m	≥ 2 m 0.5 - 2 m	≥ 2 m 0.5 - 2 m	≥ 2 m 0.5 - 2 m
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000	> 3000	> 3000
	Operating Speed On-Street Parking		> 50 to 60 km/h no	> 50 to 60 km/h no	> 50 to 60 km/h no	> 50 to 60 km/h no
	Exposure to Traffic PLoS		**D**	**D**	**D**	**D**
	Effective Sidewalk Width					
	Pedestrian Volume					
	Crowding PLoS		**-**	**-**	**-**	**-**
	Level of Service		**-**	**-**	**-**	**-**
Bicycle	Type of Cycling Facility	**E**	Mixed Traffic	Physically Separated	Mixed Traffic	Physically Separated
	Number of Travel Lanes		4-5 lanes total		2-3 lanes total	
	Operating Speed		≥ 50 to 60 km/h		≥ 50 to 60 km/h	
	# of Lanes & Operating Speed LoS		**E**	**-**	**E**	**-**
	Bike Lane (+ Parking Lane) Width					
	Bike Lane Width LoS		**-**	**-**	**-**	**-**
	Bike Lane Blockages					
	Blockage LoS		**-**	**-**	**-**	**-**
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge		< 1.8 m refuge	
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes		≤ 3 lanes	
	Sidestreet Operating Speed		>50 to 60 km/h		>50 to 60 km/h	
	Unsignalized Crossing - Lowest LoS		**C**	**A**	**B**	**A**
	Level of Service		**E**	**A**	**E**	**A**
Transit	Facility Type	**D**	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8
	Level of Service		**D**	**D**	**D**	**D**
Truck	Truck Lane Width	**A**	> 3.7 m	> 3.7 m	> 3.7 m	> 3.7 m
	Travel Lanes per Direction		> 1	> 1	> 1	> 1
	Level of Service		**A**	**A**	**A**	**A**

Appendix K

Transit Ridership Data

Stop #	Location	Route	Dir.	AM (06:00-09:00)			PM (15:00-18:00)			24-hr		
				Boardings	*Alightings*	*Avg Load at Departure*	*Boardings*	*Alightings*	*Avg Load at Departure*	*Boardings*	*Alightings*	*Avg Load at Departure*
3036	Walkley A (2A)	2	NB	71	3	18	38	4	9	231	26	12
		44	SB	2	19	15	2	9	12	7	53	10
		92	NB	5	0	20	9	0	8	29	2	10
		93	NB	11	12	26	7	8	21	19	21	23
		96	EB	-	-	-	10	10	20	10	12	18
		97	WB	13	1	14	18	12	18	74	35	12
		98	NB	18	23	34	9	9	20	62	63	24
		99	NB	13	17	25	5	8	19	21	28	21
		199	WB	-	-	-	3	3	16	3	3	16
		291	IB	8	2	19	-	-	-	8	2	19
		294	IB	5	5	30	-	-	-	5	5	30
		299	NB	2	0	22	-	-	-	2	0	22
	Walkley B (1A)	2	SB	3	7	4	12	72	20	53	195	11
		44	NB	0	0	4	15	0	21	23	0	12
		92	SB	0	0	3	4	4	18	7	16	8
		93	SB	5	1	12	20	27	35	28	31	26
		96	WB	10	2	18	-	-	-	11	2	17
		97	EB	3	8	8	10	34	22	44	109	13
		98	SB	1	4	9	25	28	39	69	69	23
		99	SB	6	3	13	18	22	30	31	27	22
		199	IB	2	0	14	-	-	-	2	0	14
		291	OB	-	-	-	5	2	17	6	2	15
		294	OB	-	-	-	6	9	31	6	10	29
		299	SB	-	-	-	2	2	16	2	2	16
8384	Walkley / Banff	44	NB	5	2	6	15	14	23	62	39	14
		291	OB	-	-	-	5	6	18	7	7	16
8431	Bank / Walkley	6	SB	5	31	9	29	50	17	97	201	12
		93	SB	-	-	-	0	0	52	0	0	52
8436	Bank / Walkley	6	NB	23	4	14	26	9	14	104	32	12
		90	SB	0	0	40	-	-	-	0	0	40
		92	SB	0	0	36	-	-	-	0	0	36
		93	NB	0	1	36	-	-	-	0	1	36
8969	Walkley / Bank	44	SB	0	13	18	12	20	14	31	88	12
		90	NB	-	-	-	-	-	-	0	0	66
		92	NB	-	-	-	-	-	-	0	0	49
		93	SB	-	-	-	0	0	52	0	0	52
		291	IB	0	1	19	-	-	-	0	1	19

Note:

- Cells with a zero (0) value indicate a measured average value of zero, based on available APC data, rather than an absence of data.
- Cells with a dash (-) value indicate that the stop is not served in the given direction and time period.
- Routes numbered in the 600s are school routes, providing custom routing and custom trip times to connect students to/from various secondary schools. While any person is able to board these trips if it works for them, OC Transpo does not consider these routes as part of regular service and therefore they are not included in regular route and capacity planning analyses.